Midlandscapes

TASMANIAN Land CONSERVANCY

BUSH HERITAGE AUSTRALIA

Tasmania

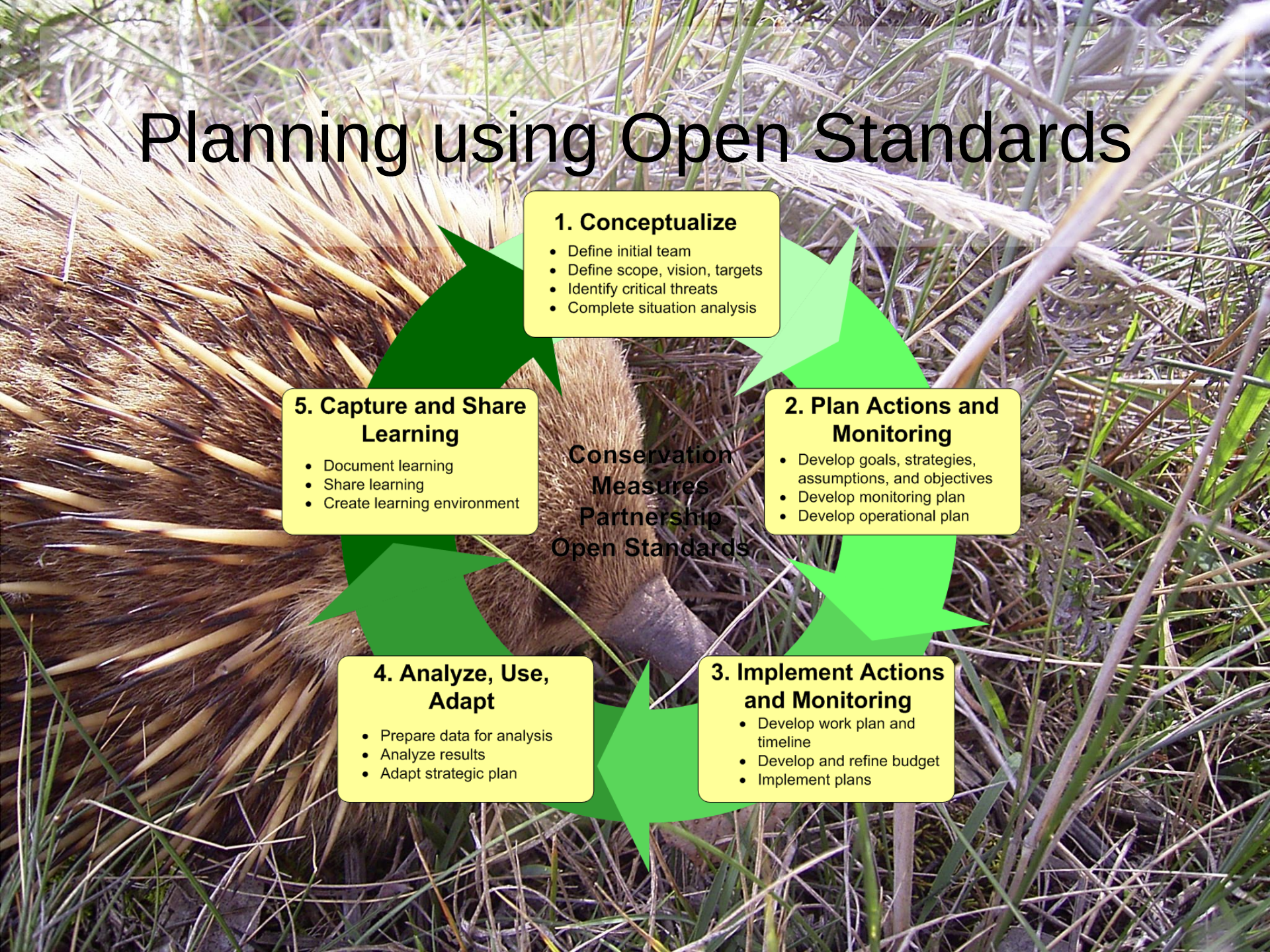
Greening Australia

Practical conservation at a landscape scale

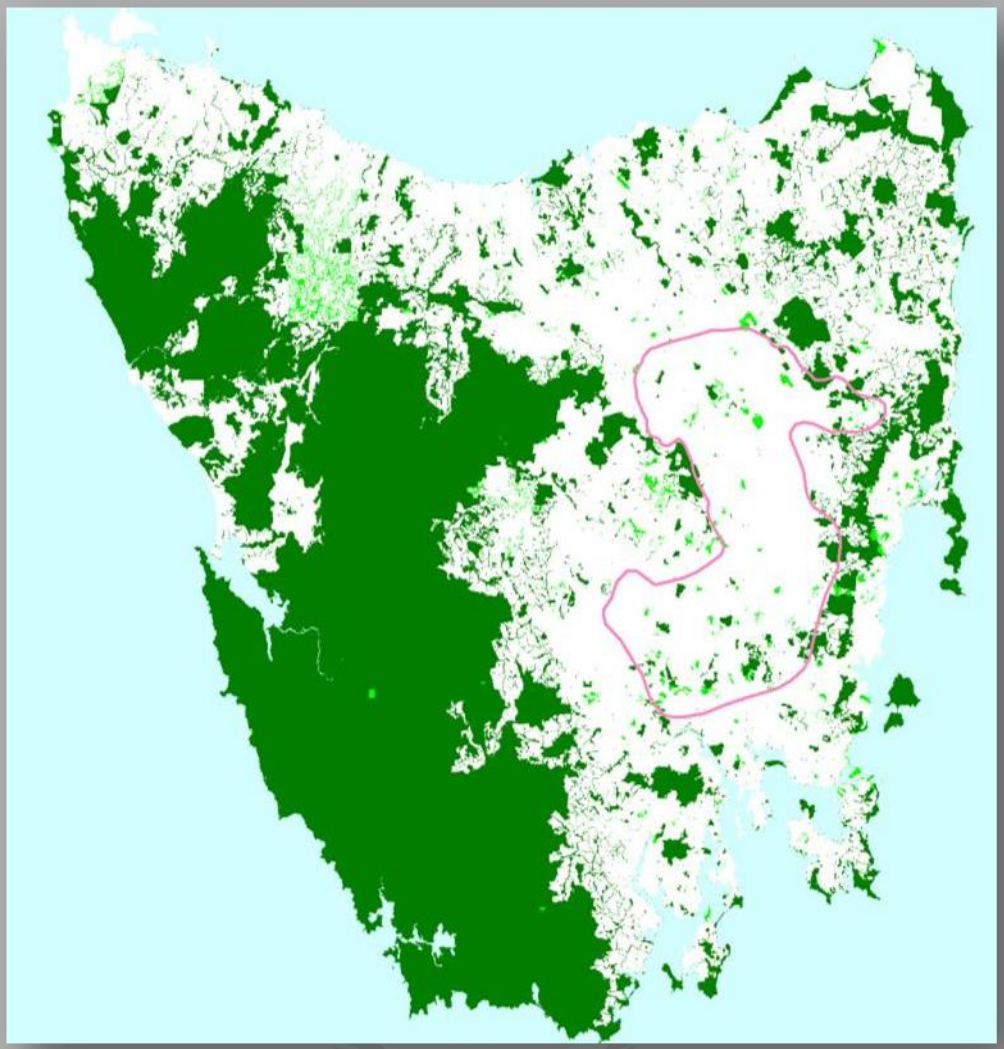
Introduction

- Why the Tasmanian Midlands
- Planning using the Open Standards
  Conservation Action Plan: Targets, goals, strategies, business
- Saving the best: Midlands Conservation Fund
  Tasmanian Land Conservancy, Bush Heritage Australia
- Connectivity: revegetation and restoration
  Greening Australia
- Monitoring, research and future challenges
- Conclusions

Planning using Open Standards



Midlandscapes Overview



Where – Tasmanian Midlands Biodiversity Hotspot

Why – Threatened species,
Endemic species,
Low % reservation,
High conservation values

Initiating partners

- Tasmanian Land Conservancy
- Bush Heritage Australia
- DPIPWE

Landowners

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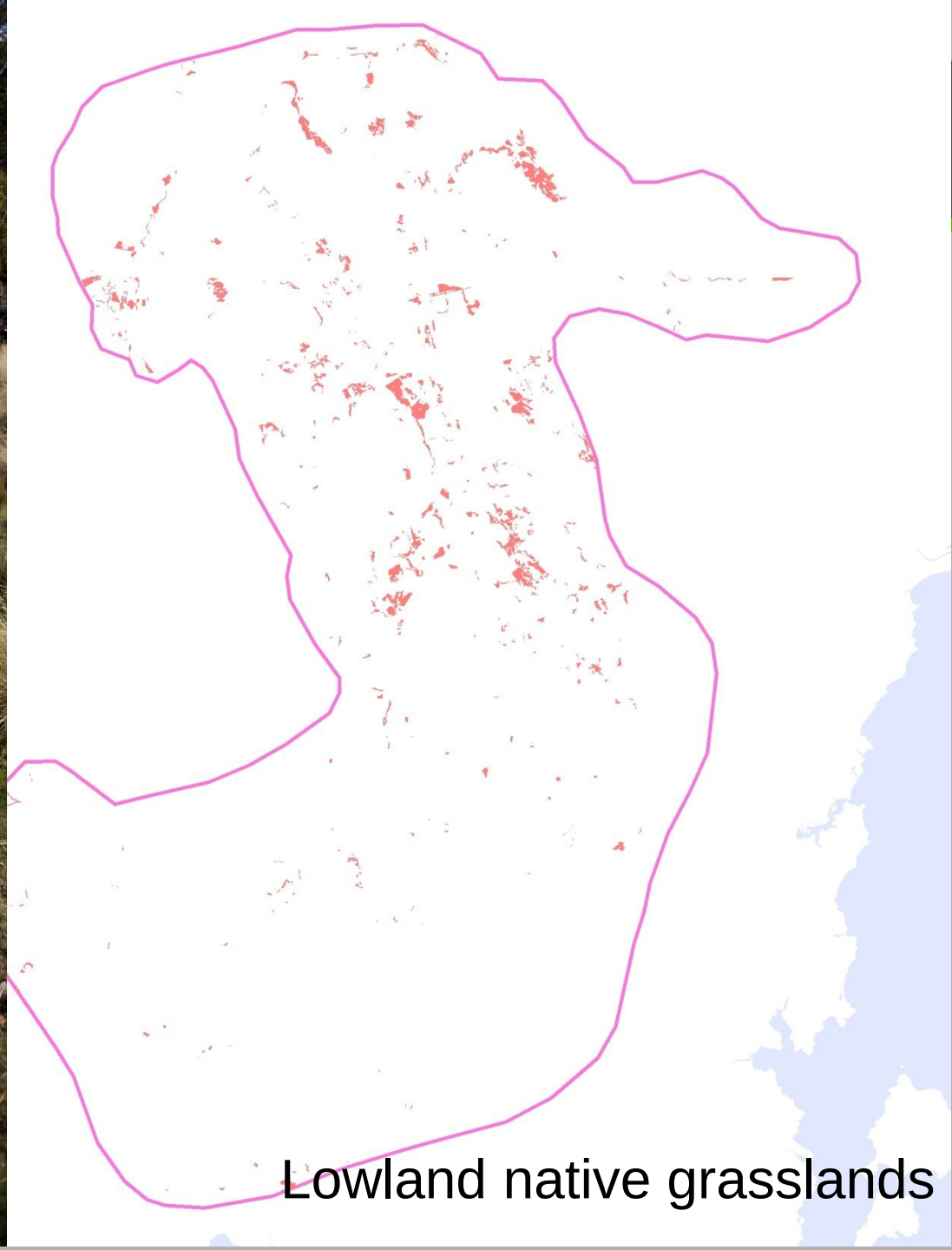
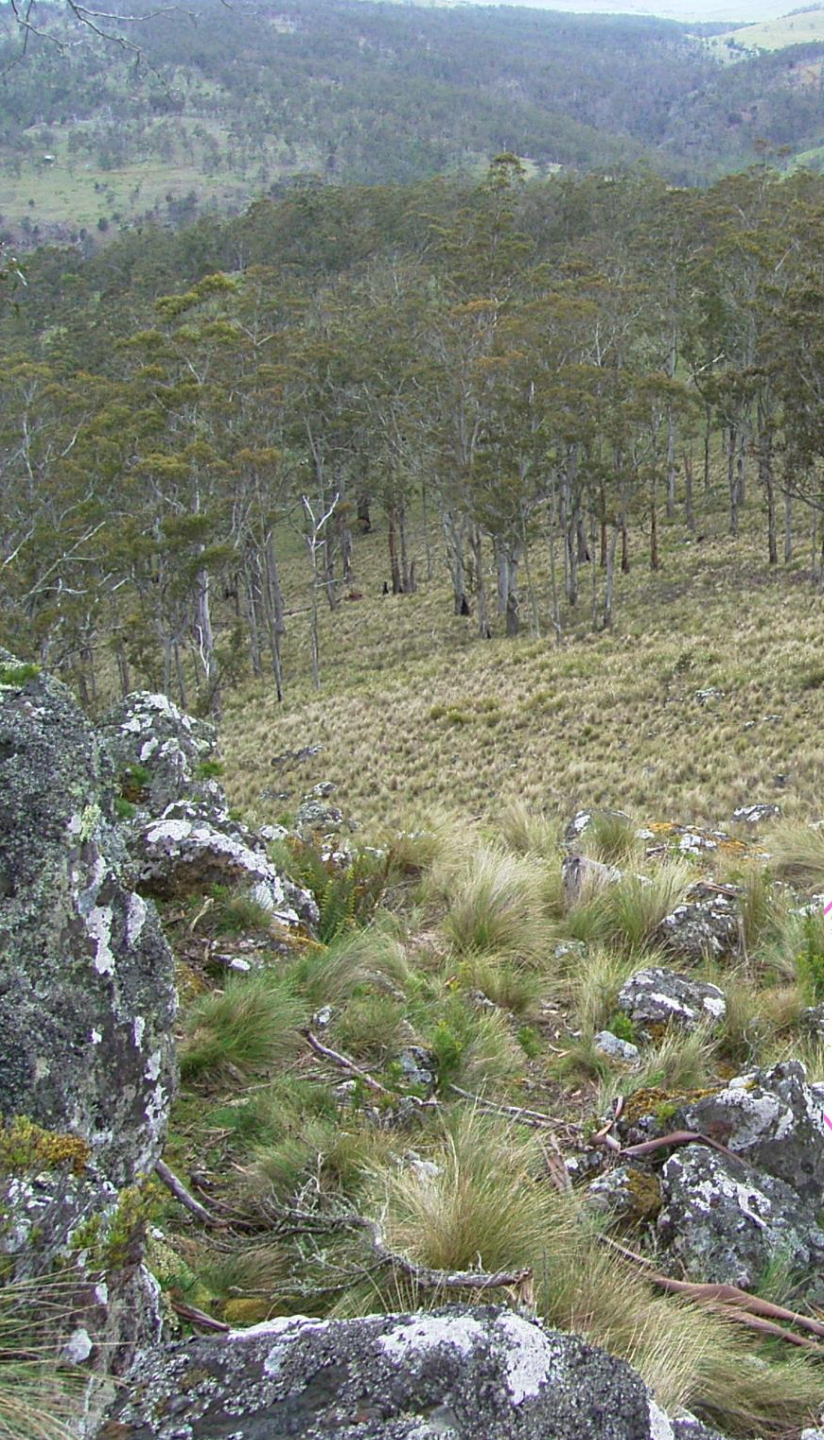
TASMANIAN Land CONSERVANCY

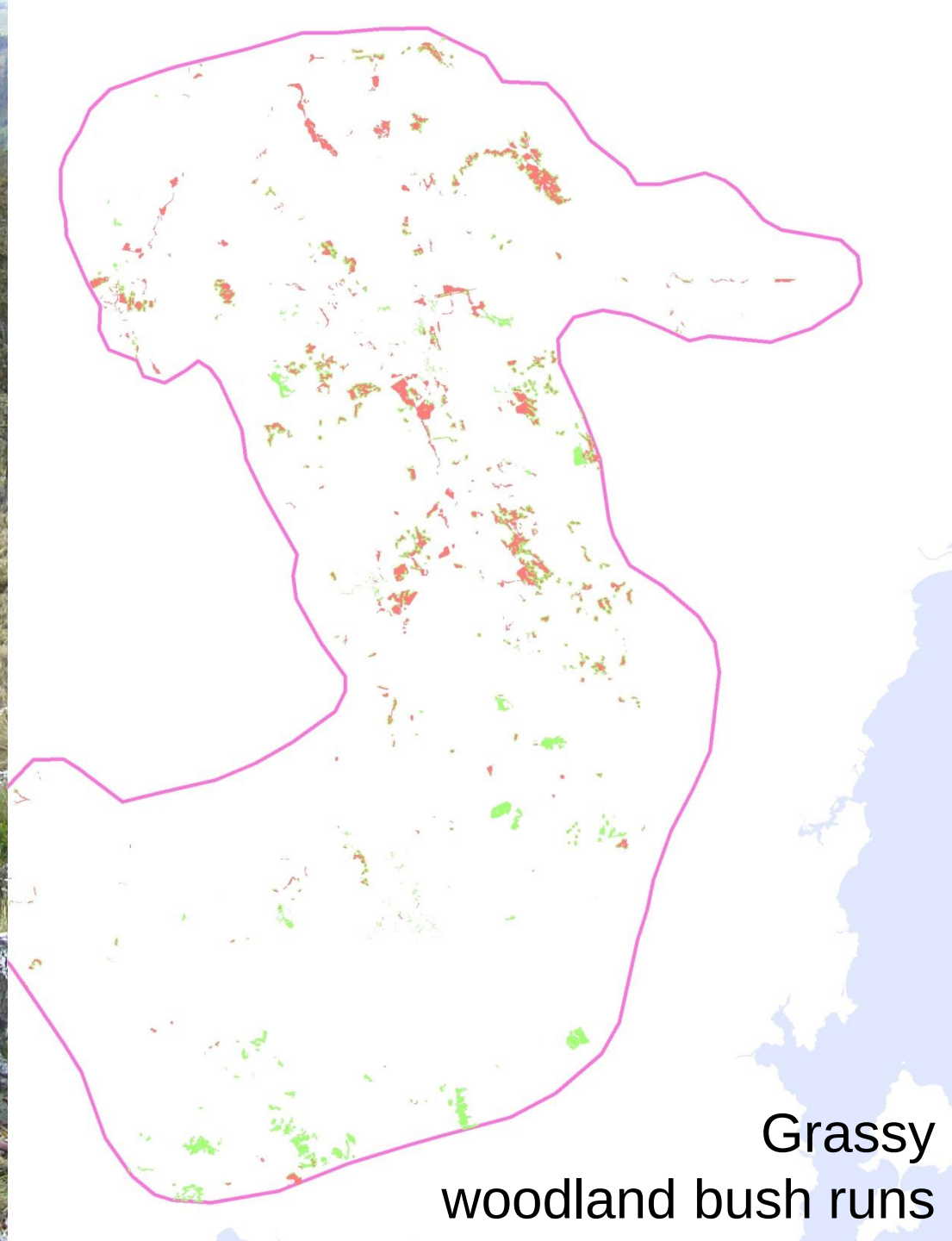
CAP Elements

- Landscape scale planning – spatial, objective and business driven
- Key Conservation Assets
  - 3 ecological communities
  - 3 geomorphic units
  - 3 sets of vulnerable fauna
- Engaged with local landowners in planning phase
- Thesis – 64,000 ha of the Assets managed for conservation by 2020
- Initially one key strategy: save the best with MCF
- Monitoring plan developed
  Indicators selected ›››› Adaptive management

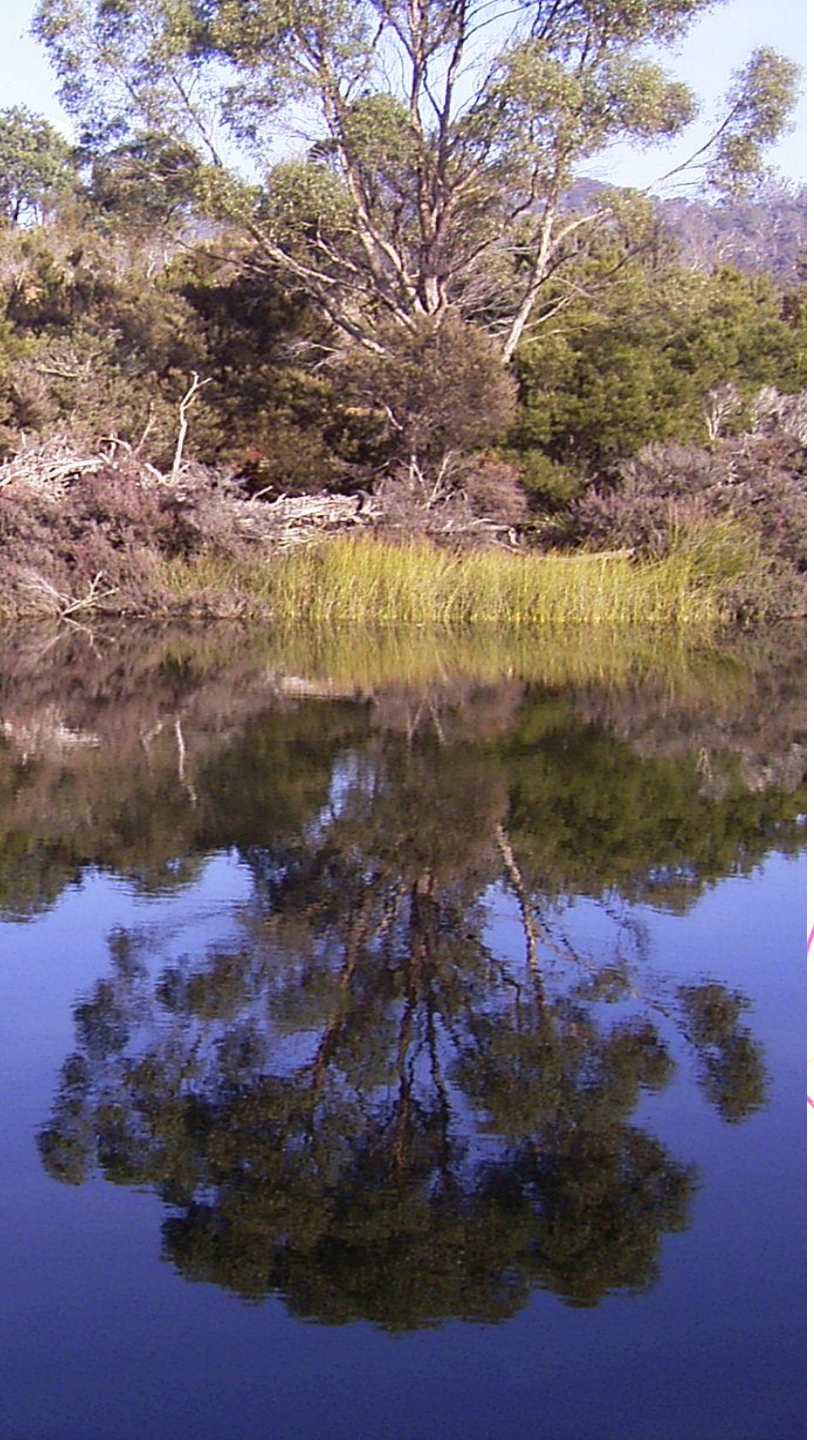


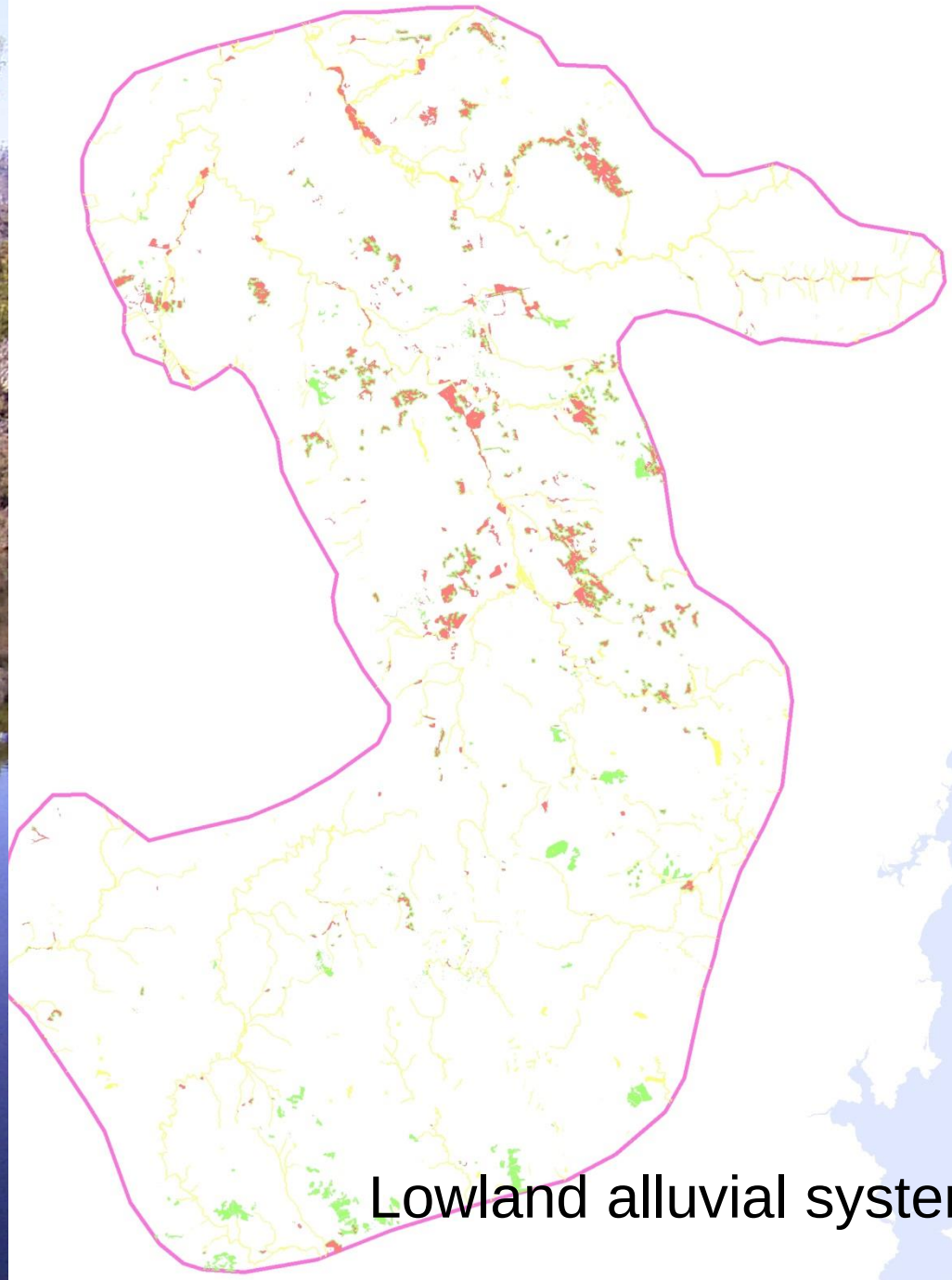
Lowland native grasslands



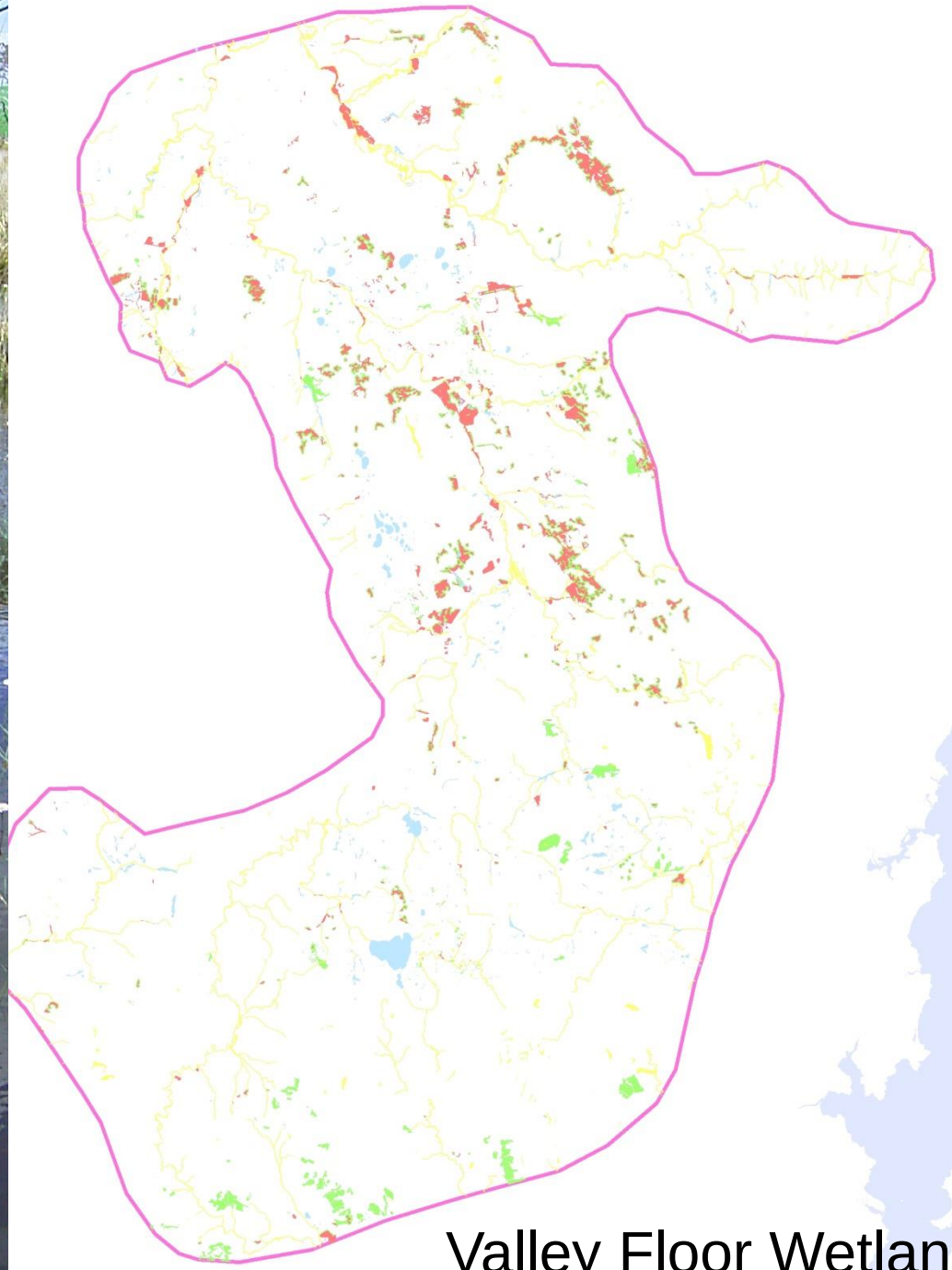


Grassy
woodland bush runs

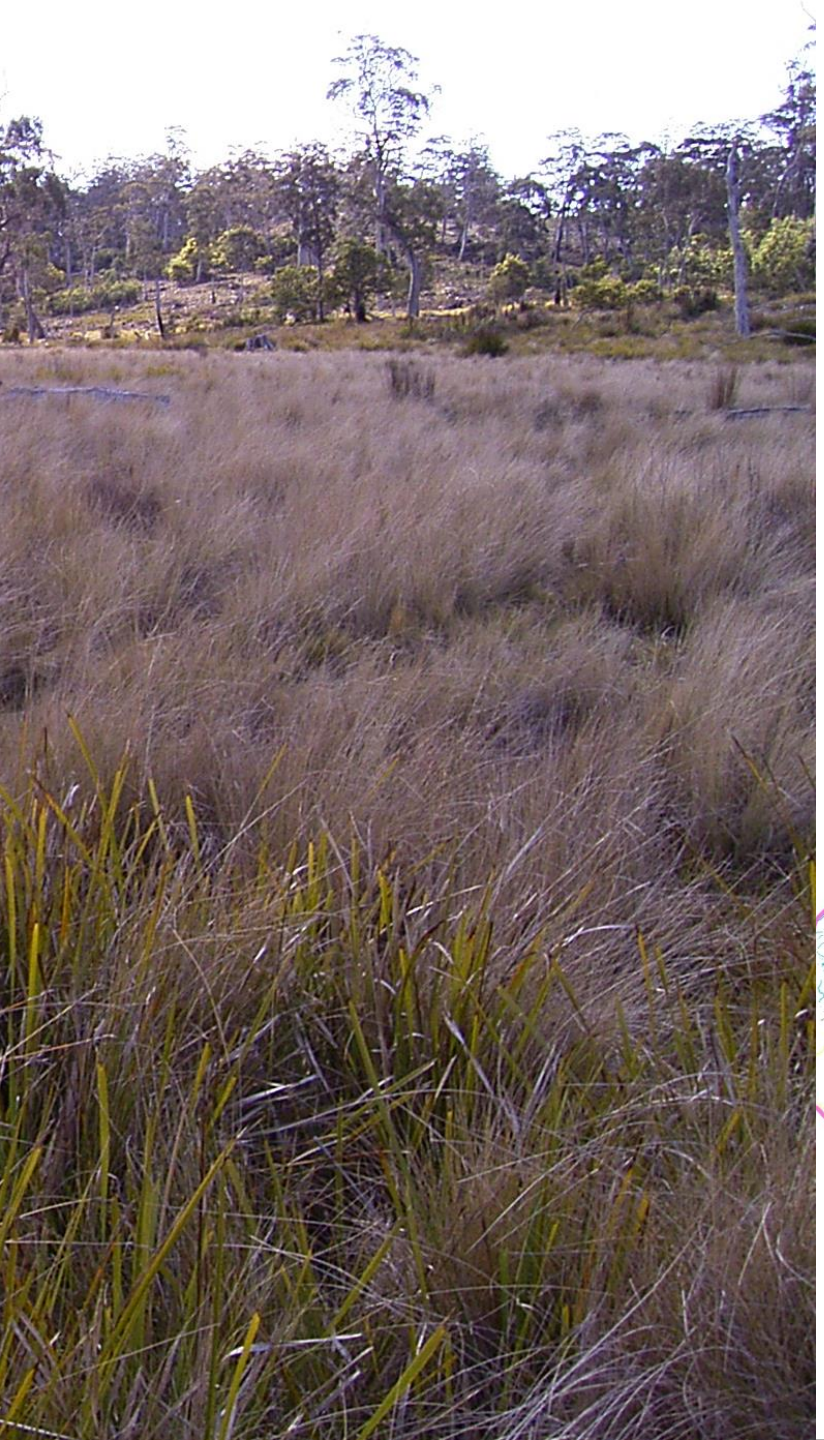


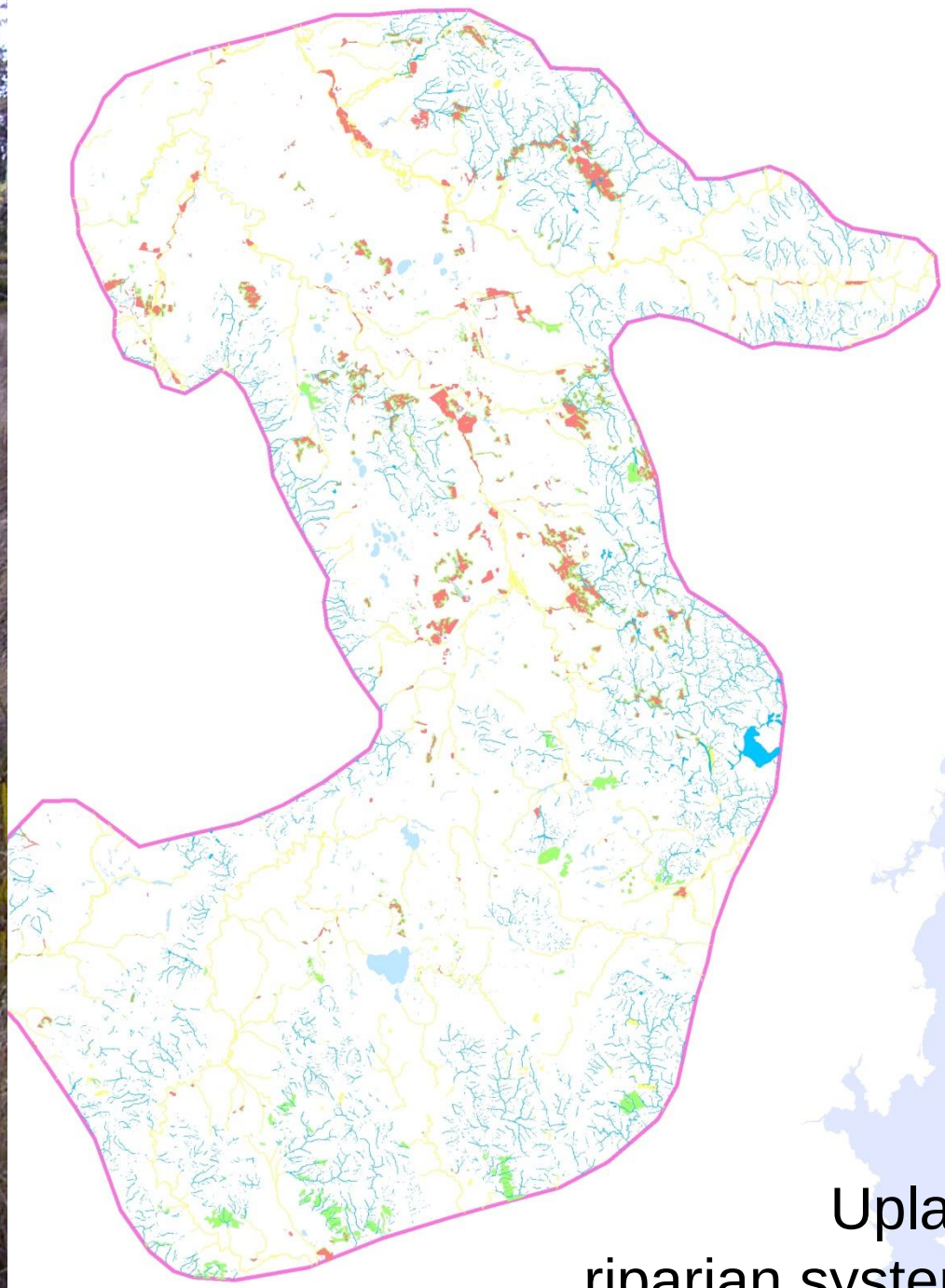


Lowland alluvial systems

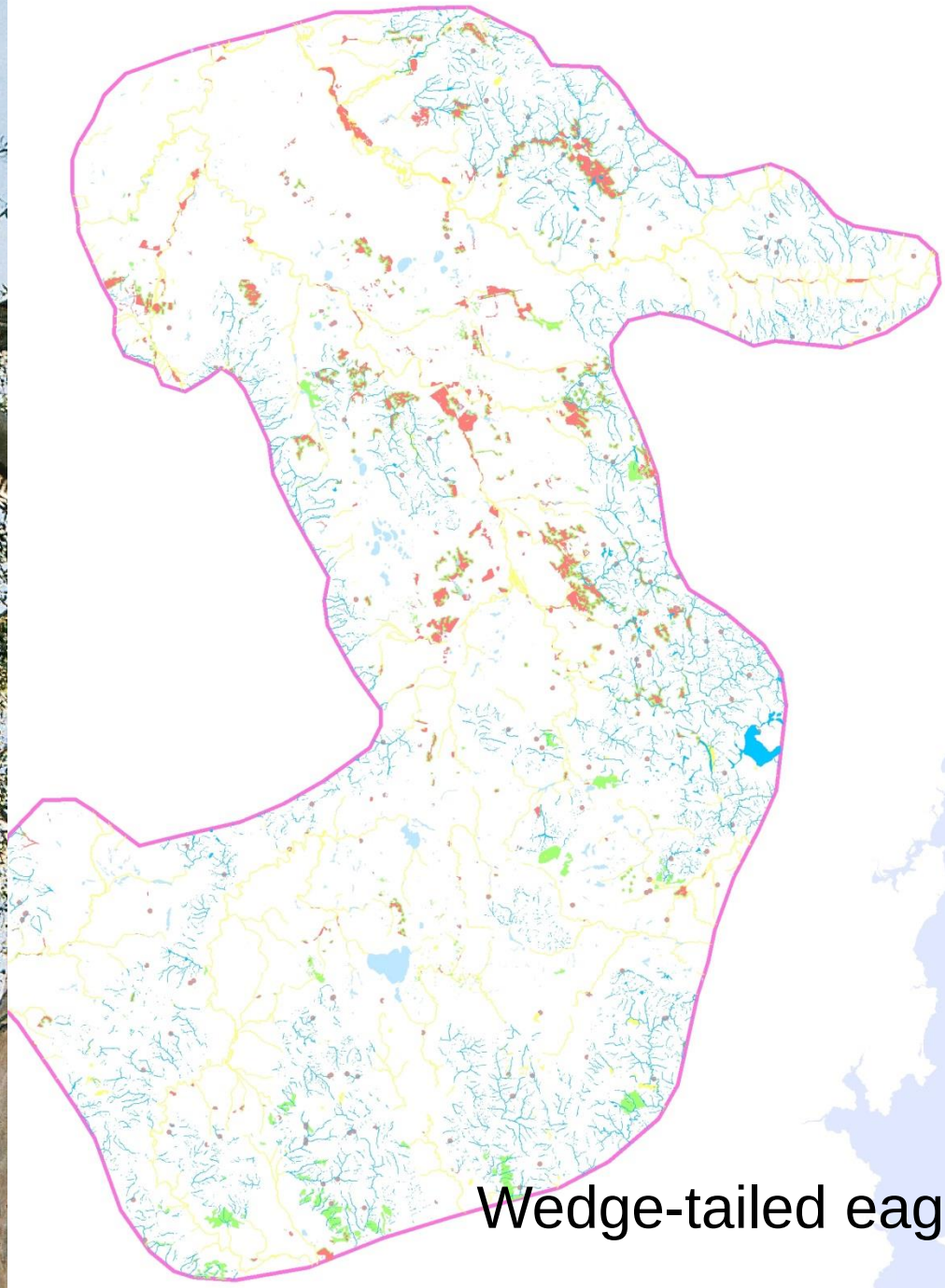


Valley Floor Wetlands

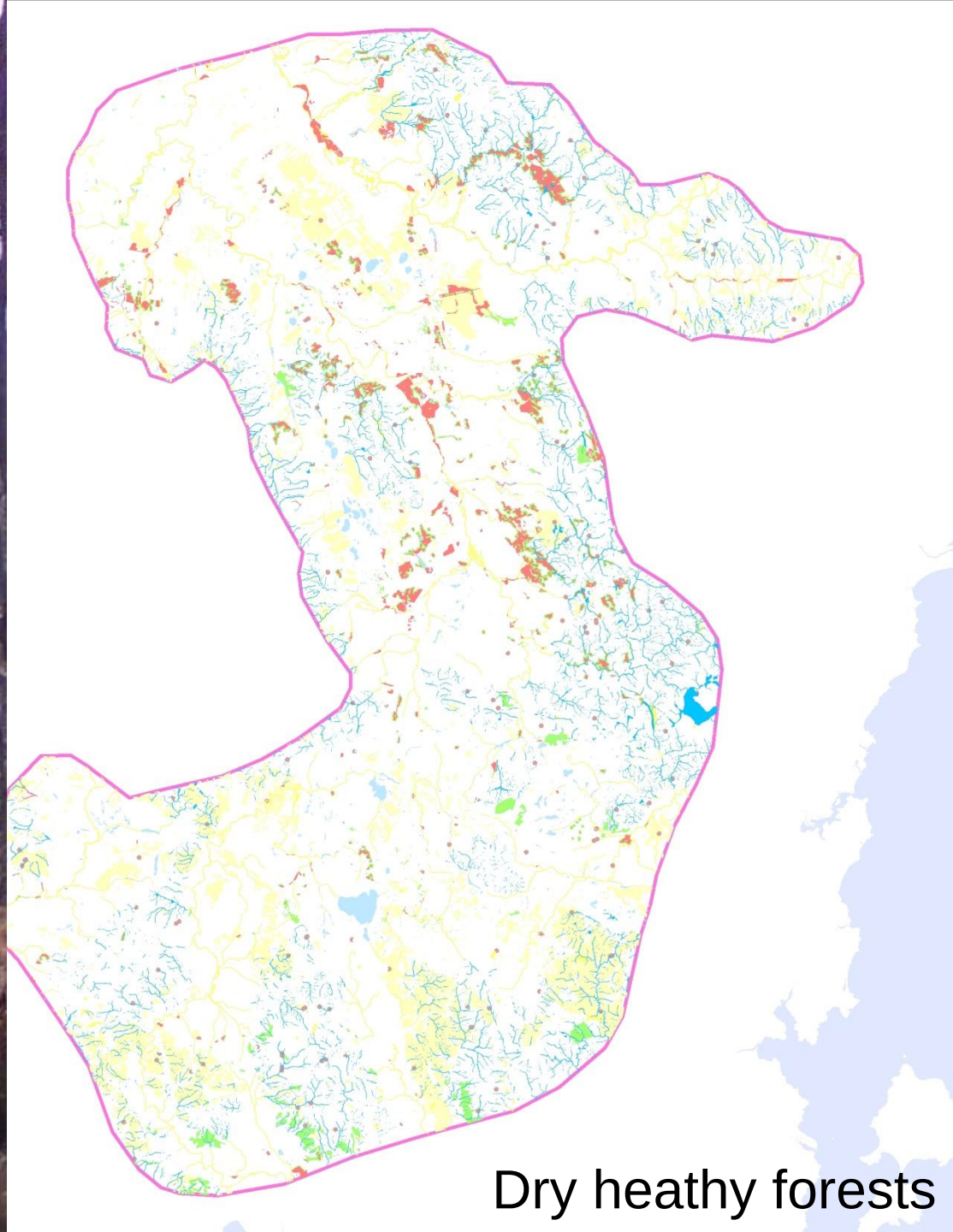




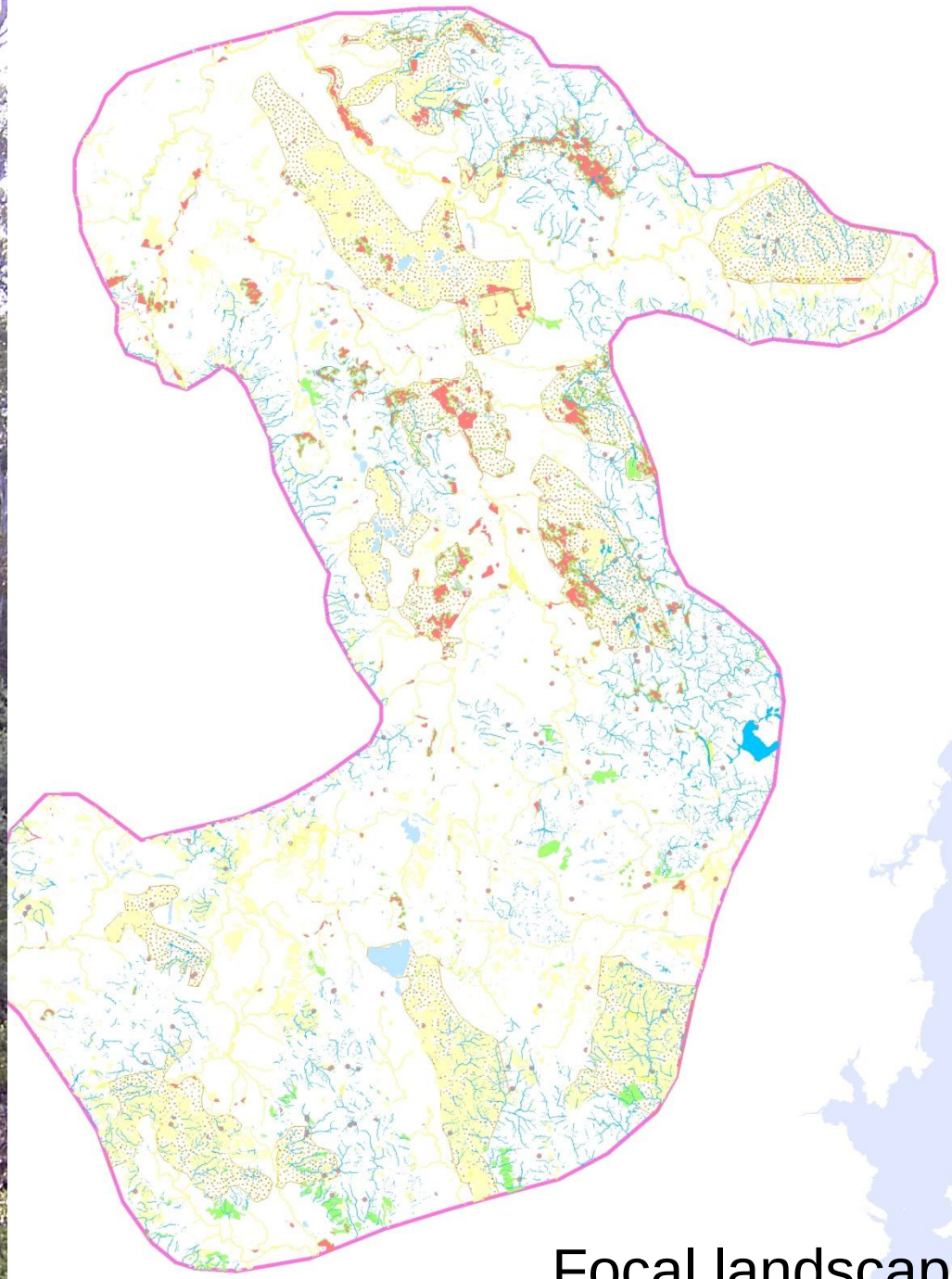
Upland
riparian systems



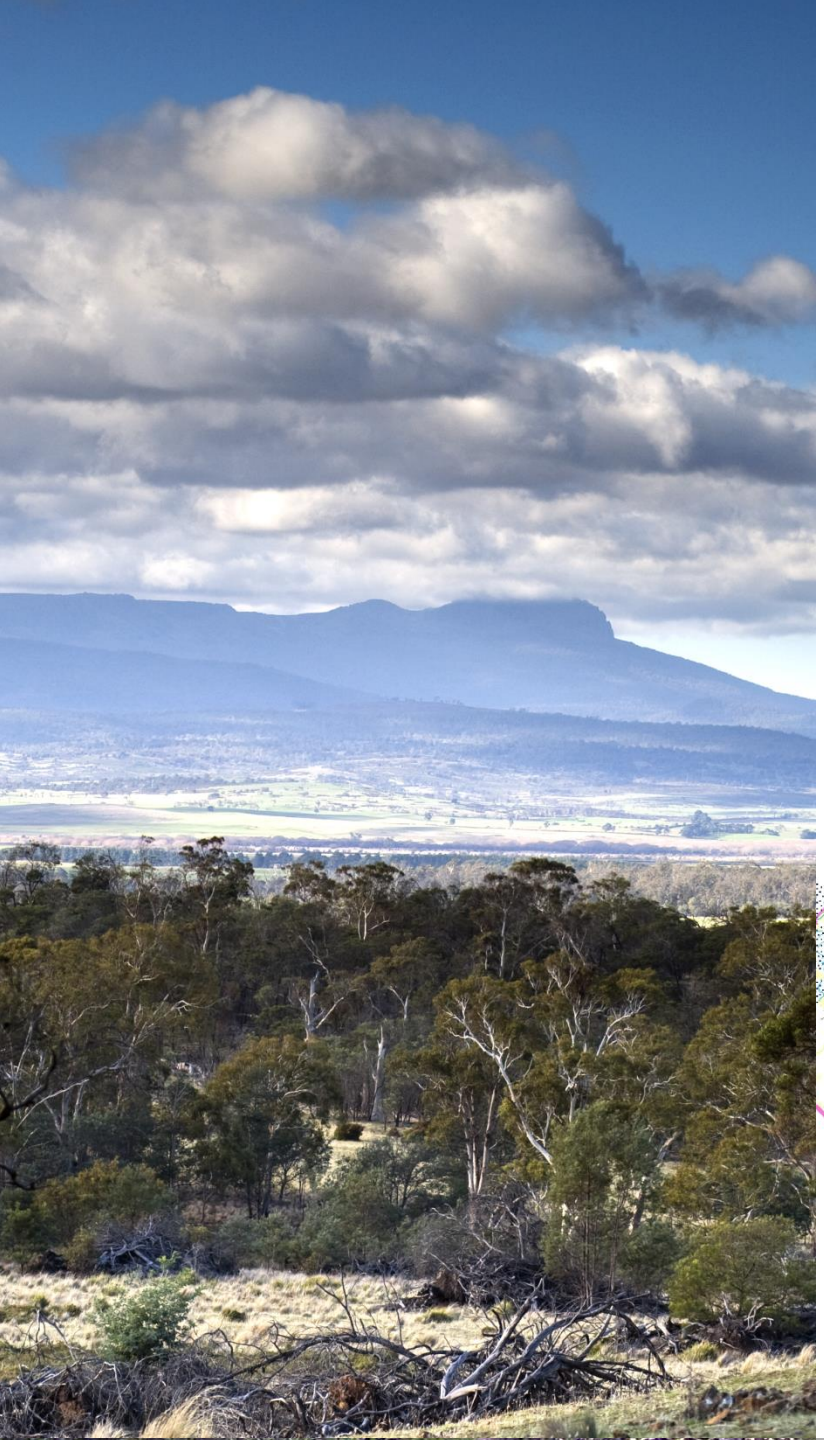
Wedge-tailed eagles

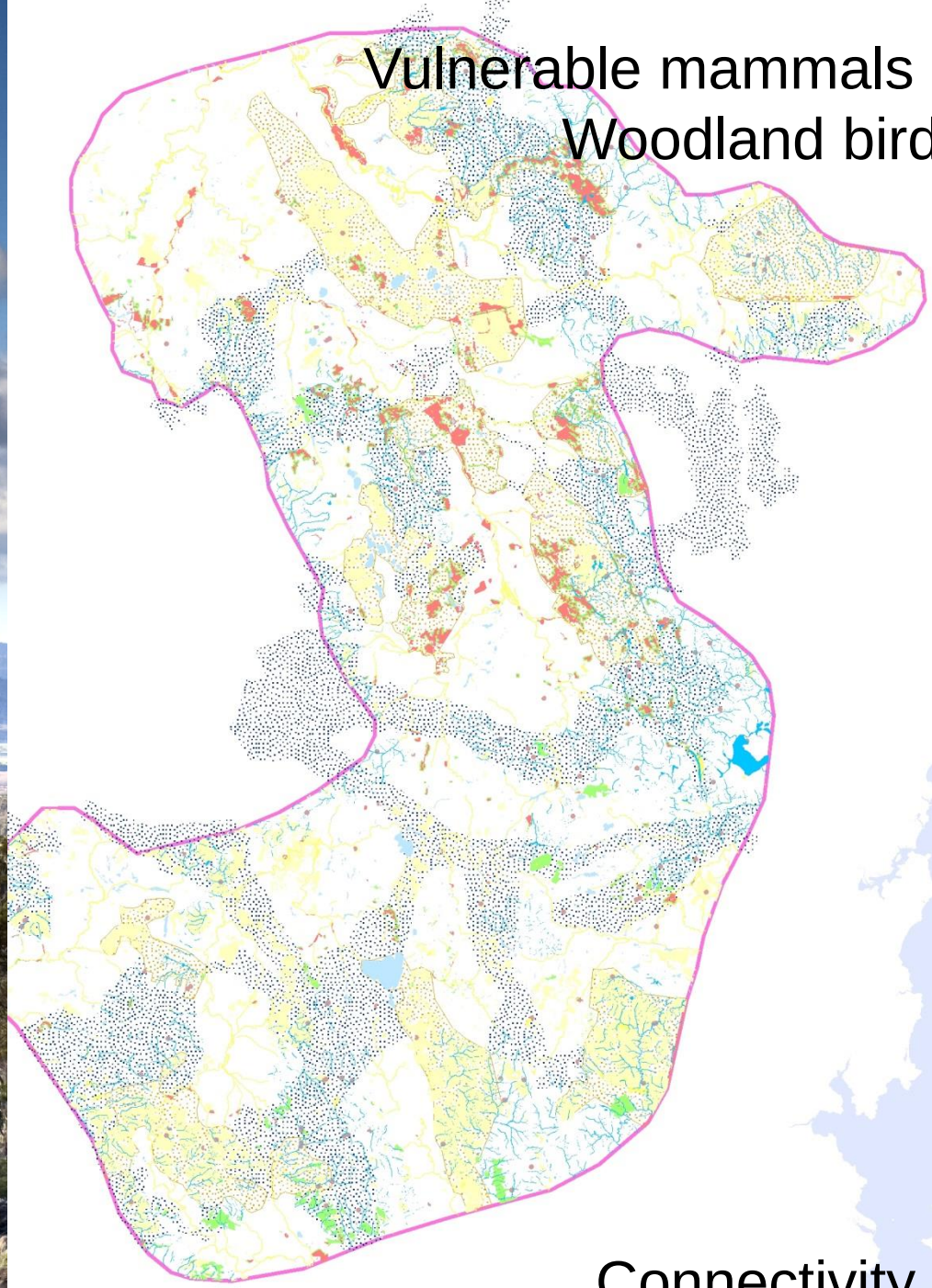


Dry heathy forests



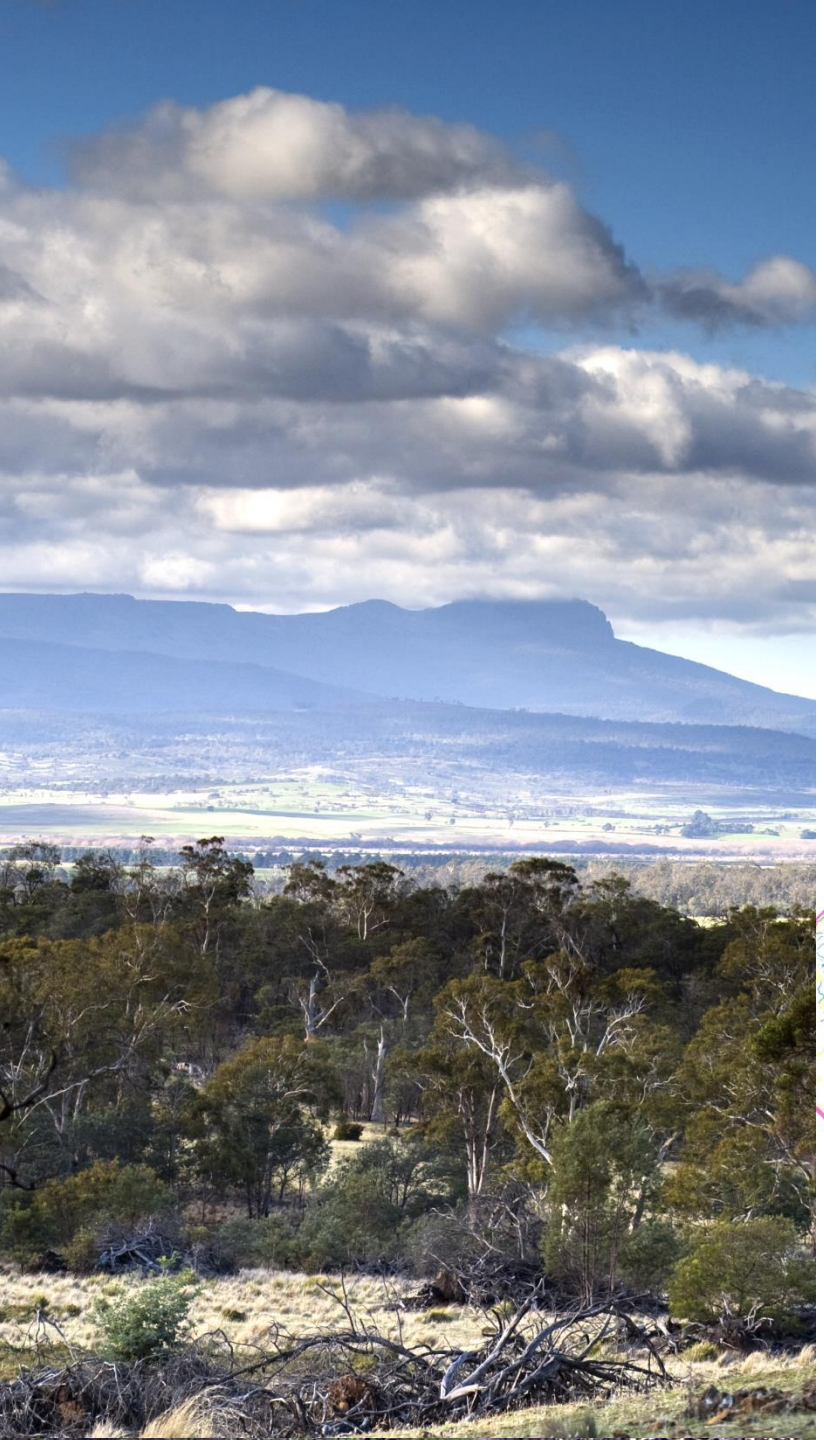
Focal landscapes

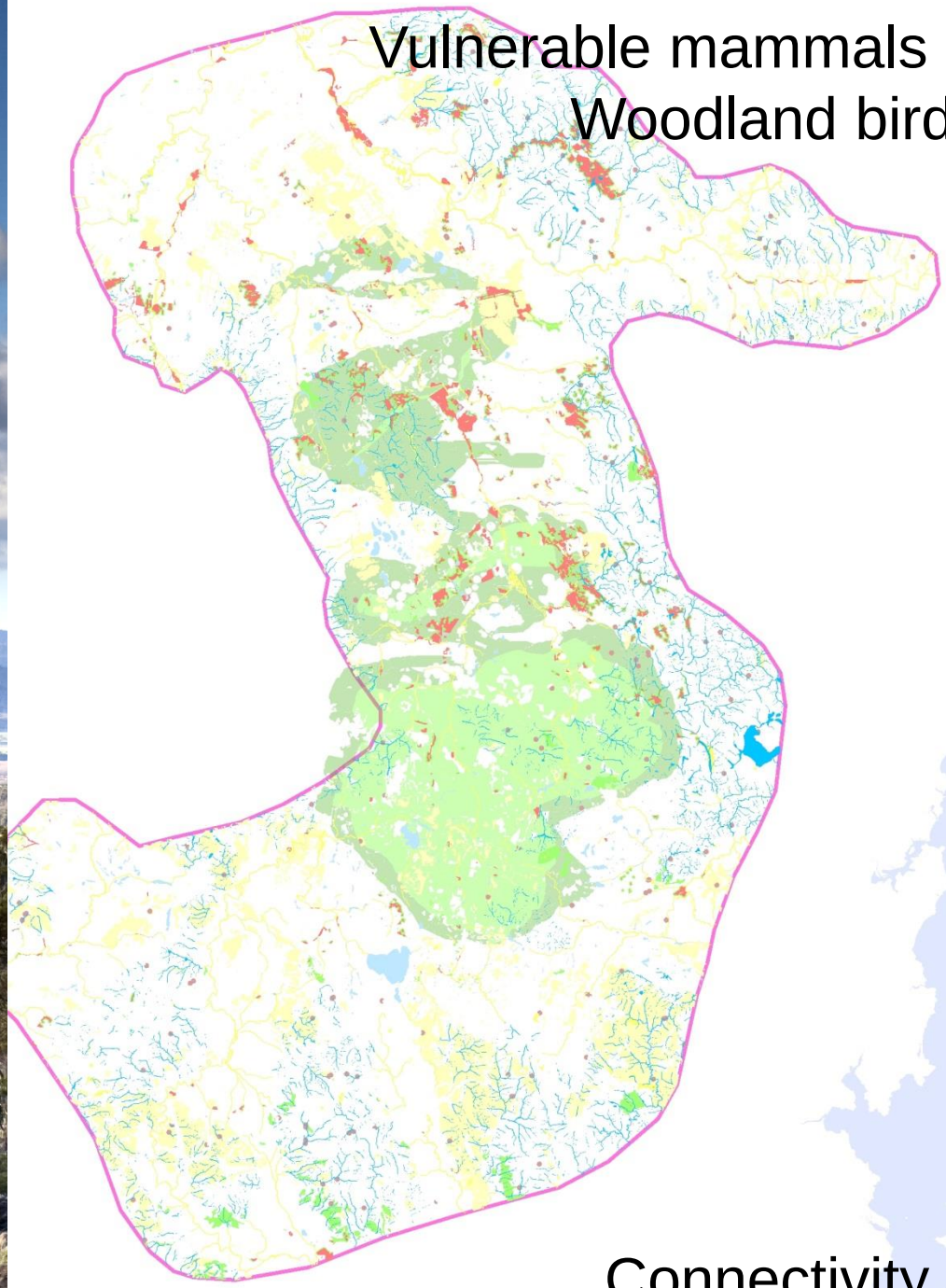




Vulnerable mammals & Woodland birds

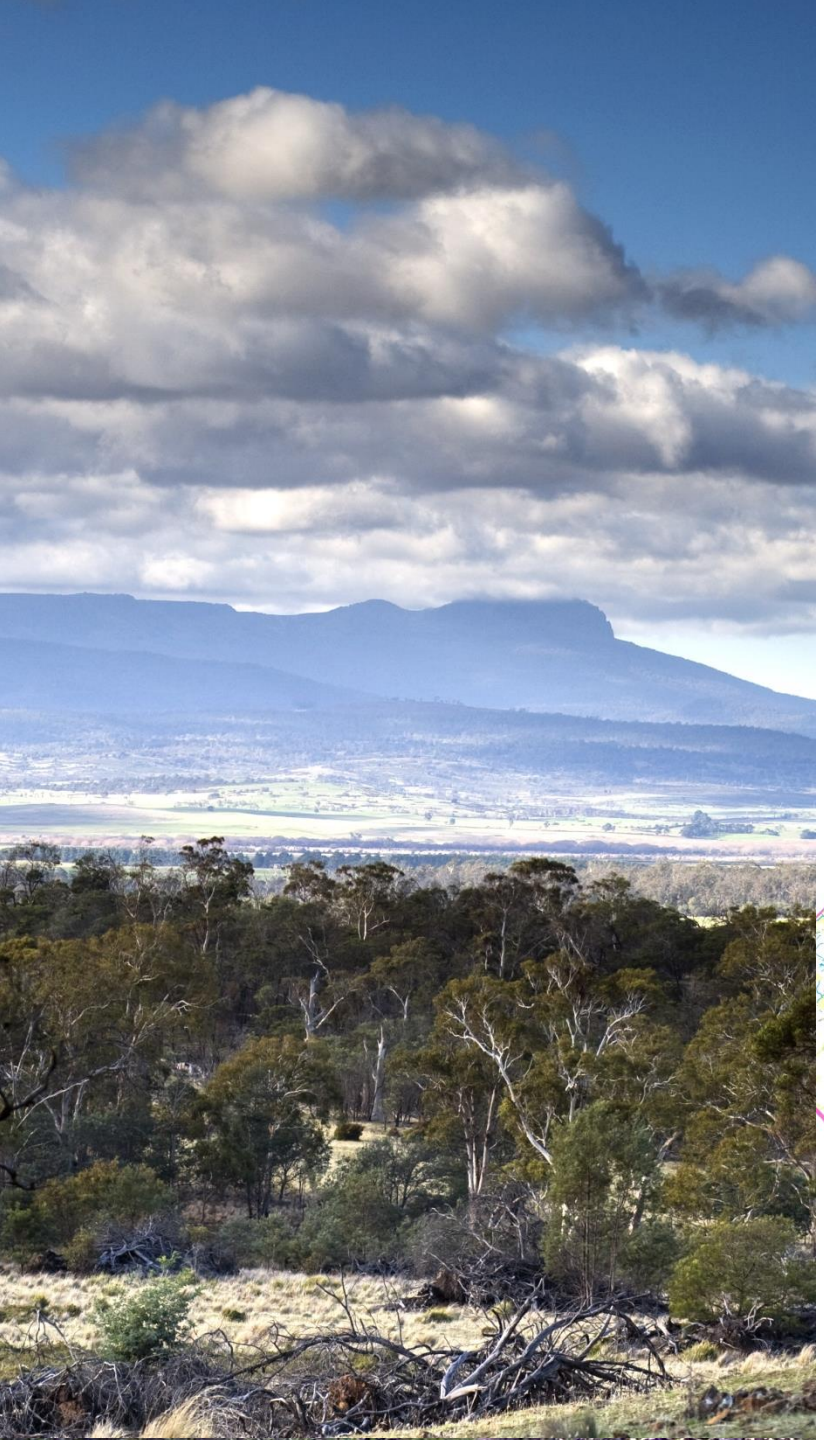
Connectivity V1



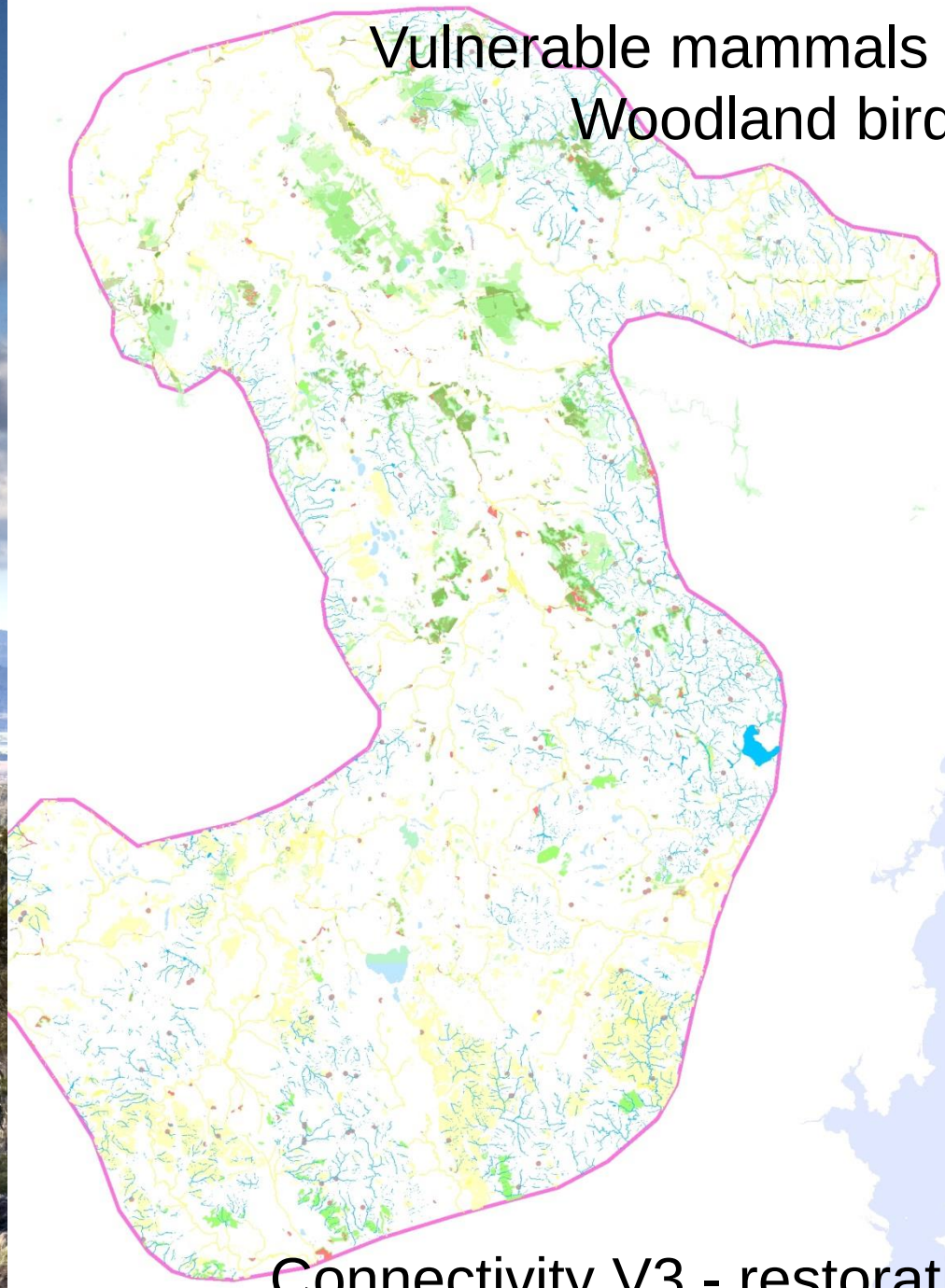


Vulnerable mammals &
Woodland birds

Connectivity V2

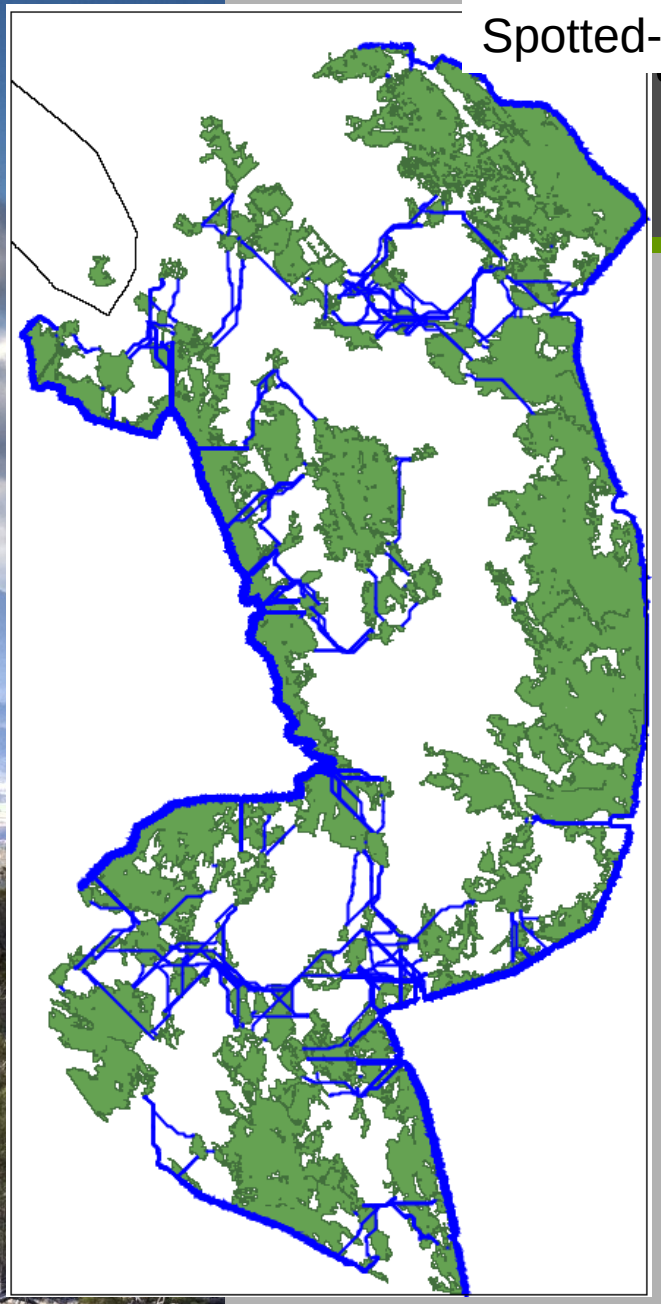


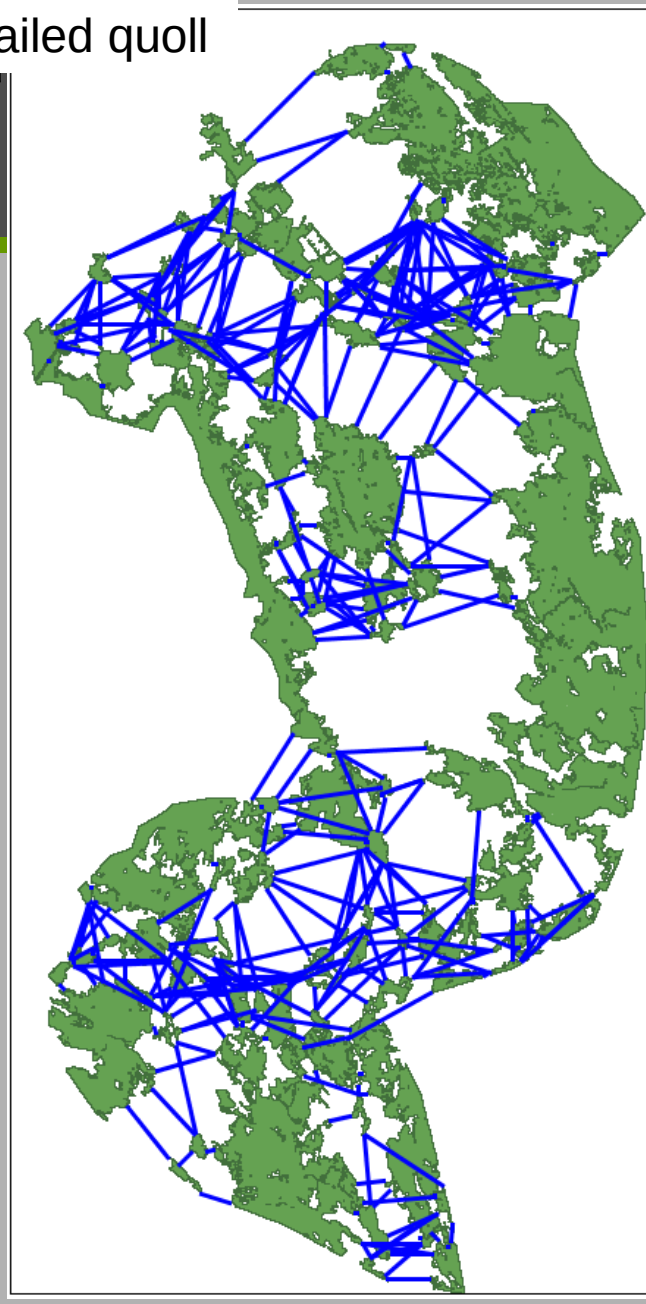
Vulnerable mammals &
Woodland birds



Connectivity V3 - restoration

Spotted-tailed quoll



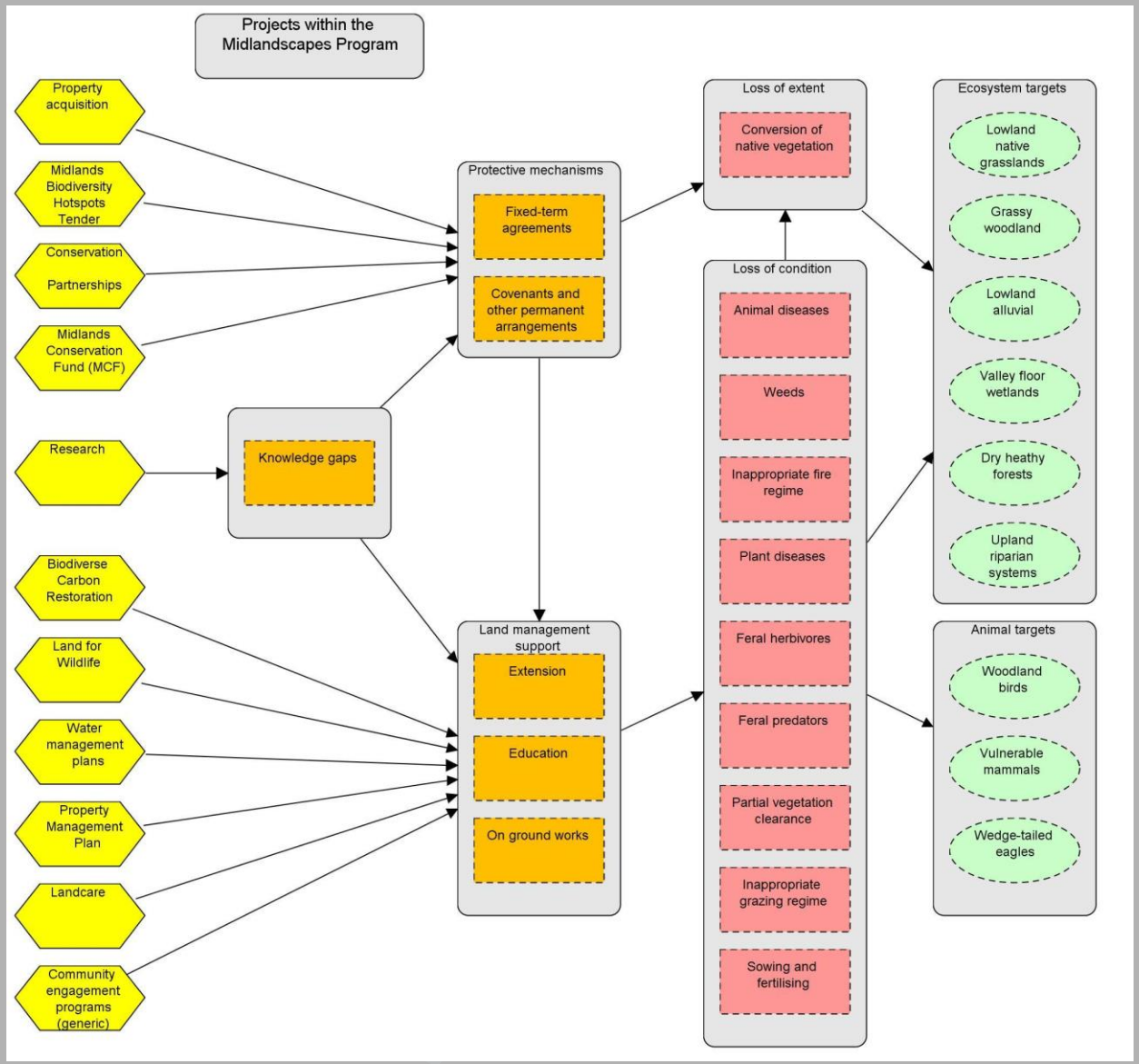


Connectivity V4 – Gap CLoSR

Fauna Assets and connectivity

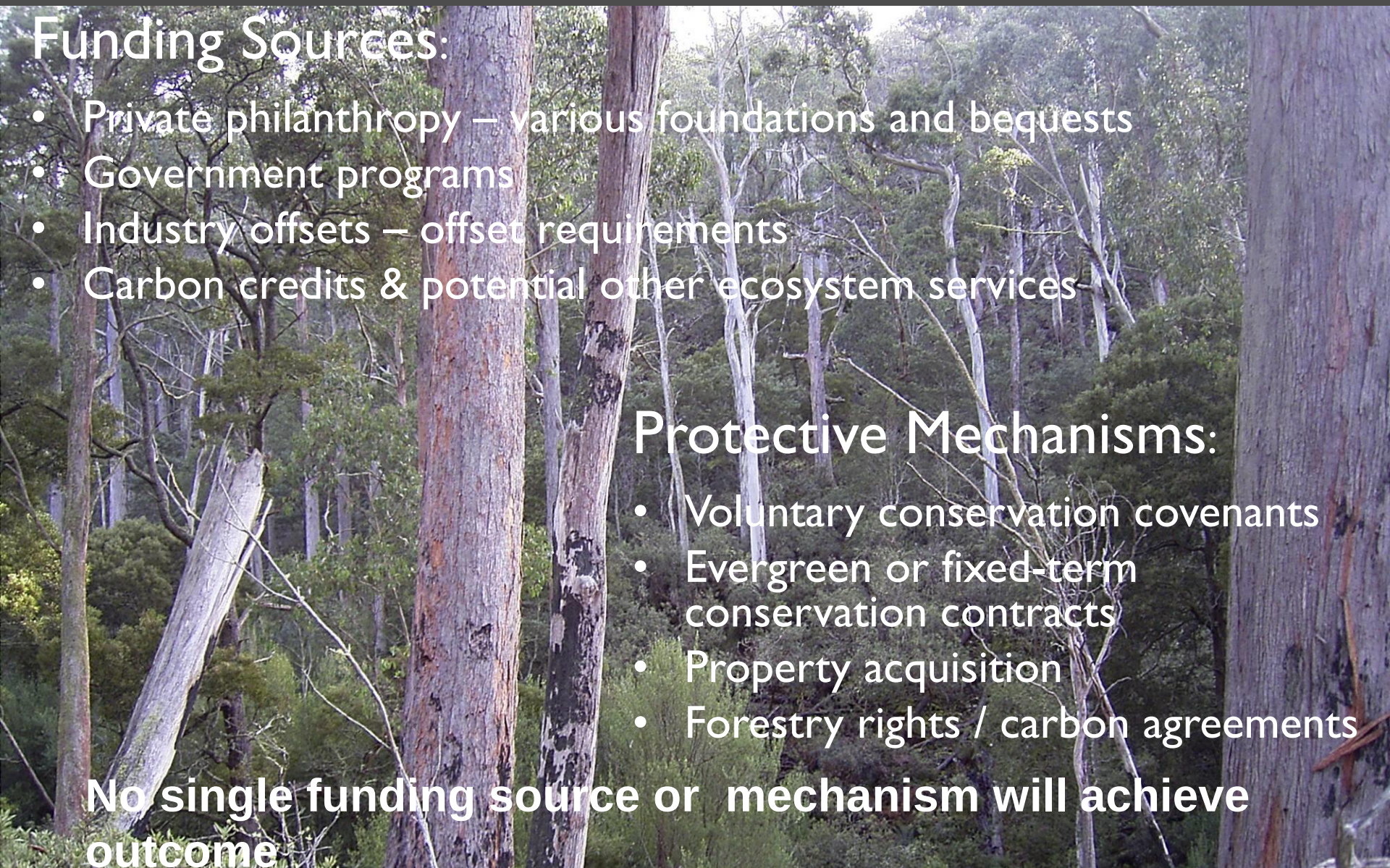
- Becoming better understood
- First pass – which remnants are critical
- What habitat elements are critical
- Then the expensive option of revegetation
- Modelling showing that it is not too late

Program model successes



- Collaboration with landowners, public, private sector
- Careful planning and review
- Wide range of projects – some formally part of Midlandscapes
- Strengthening ties between projects
- Core partners offer long-term governance, management & extension

Funding and protection mechanisms



Funding Sources:

- Private philanthropy – various foundations and bequests
- Government programs
- Industry offsets – offset requirements
- Carbon credits & potential other ecosystem services

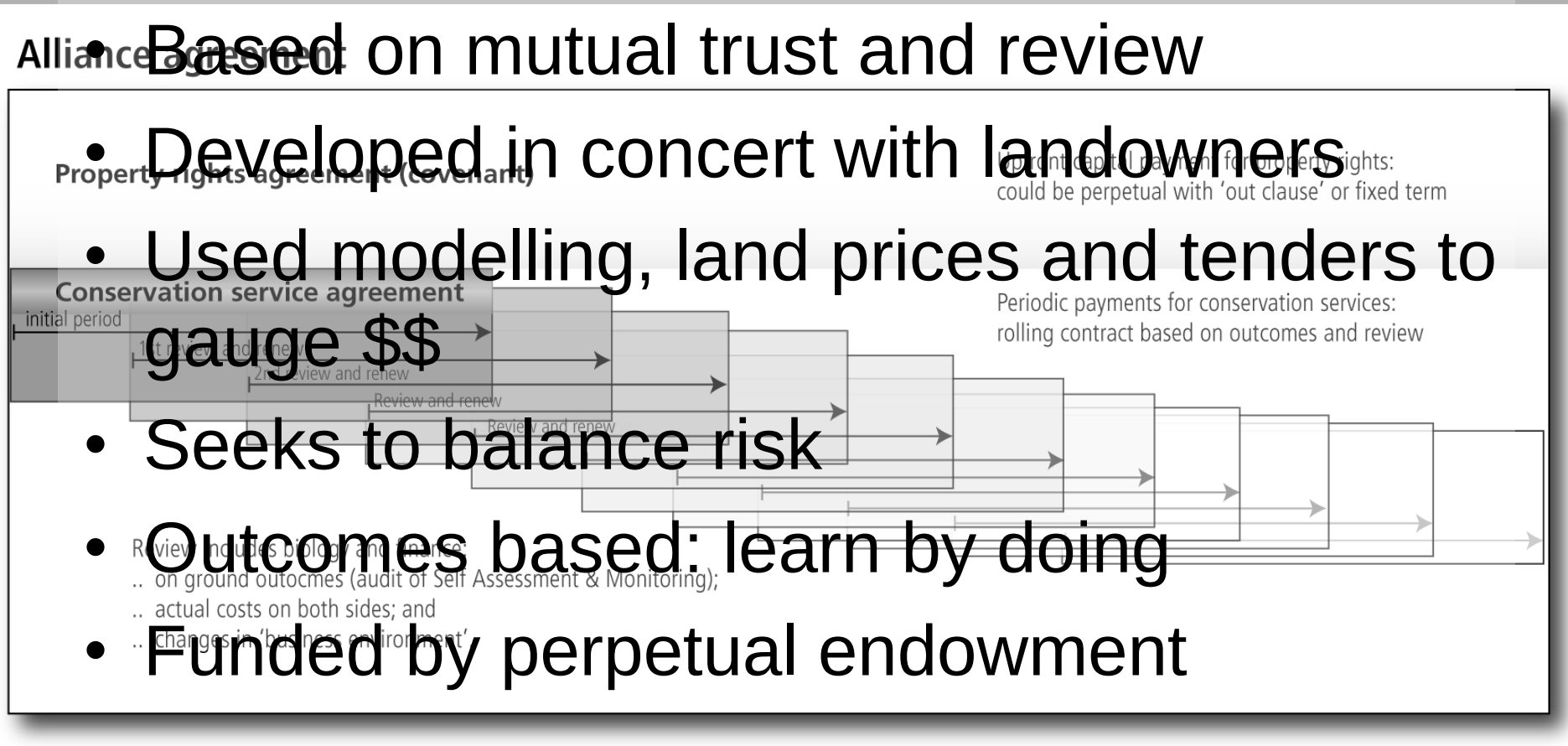
Protective Mechanisms:

- Voluntary conservation covenants
- Evergreen or fixed-term conservation contracts
- Property acquisition
- Forestry rights / carbon agreements

No single funding source or mechanism will achieve outcome

Conservation enterprise model

- Income stream for conservation services
- Based on mutual trust and review
- Developed in concert with landowners
- Used modelling, land prices and tenders to gauge $$
- Seeks to balance risk
- Outcomes based: learn by doing
- Funded by perpetual endowment



Strategic restoration in the Northern Midlands of Tasmania: 1000 ha underway

Greening Australia
www.greeningaustralia.org.au

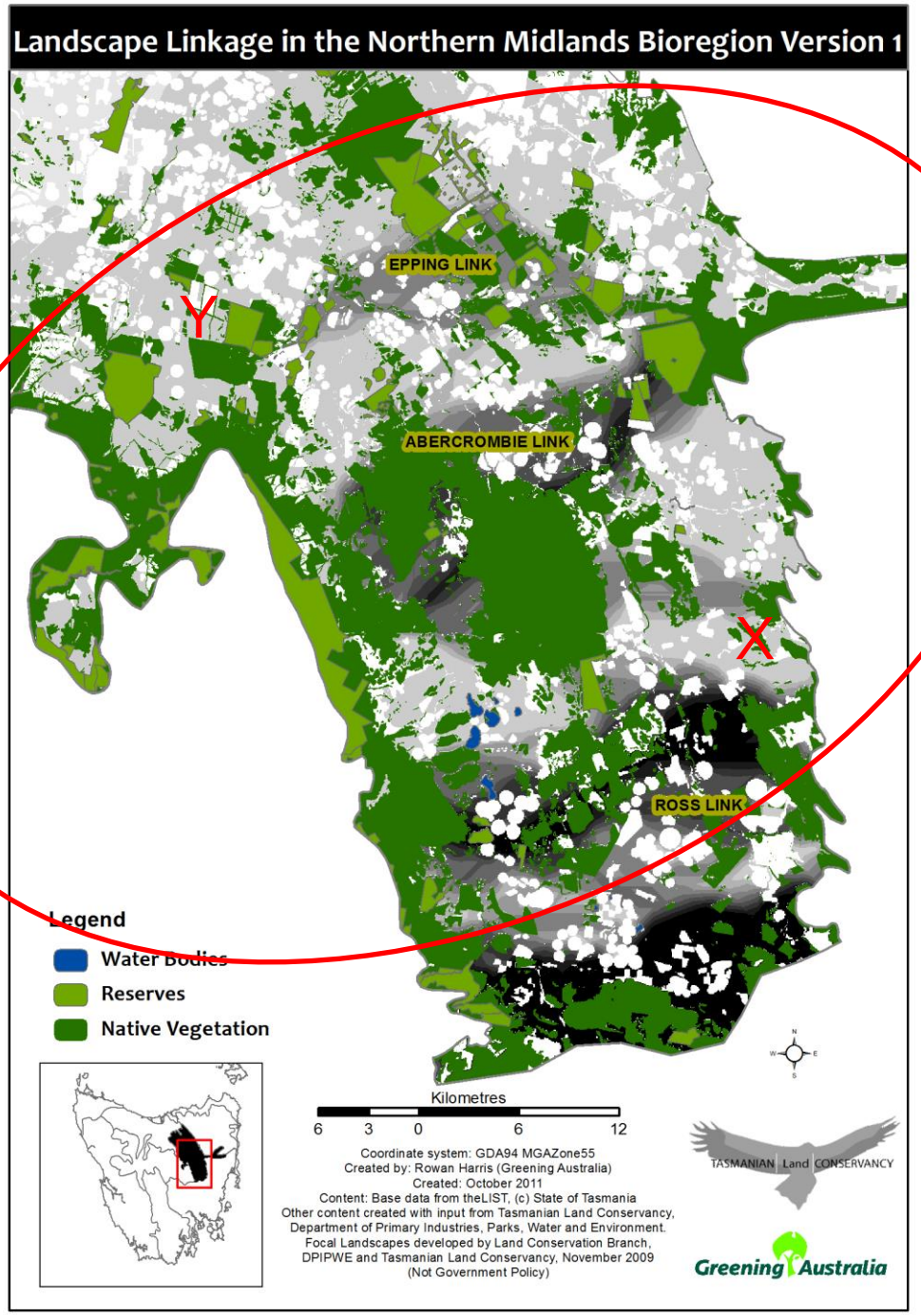
Modeling for restoration

GIS patch-linkage model for wildlife corridors
(GA, TLC, BHA, DPIPWE)

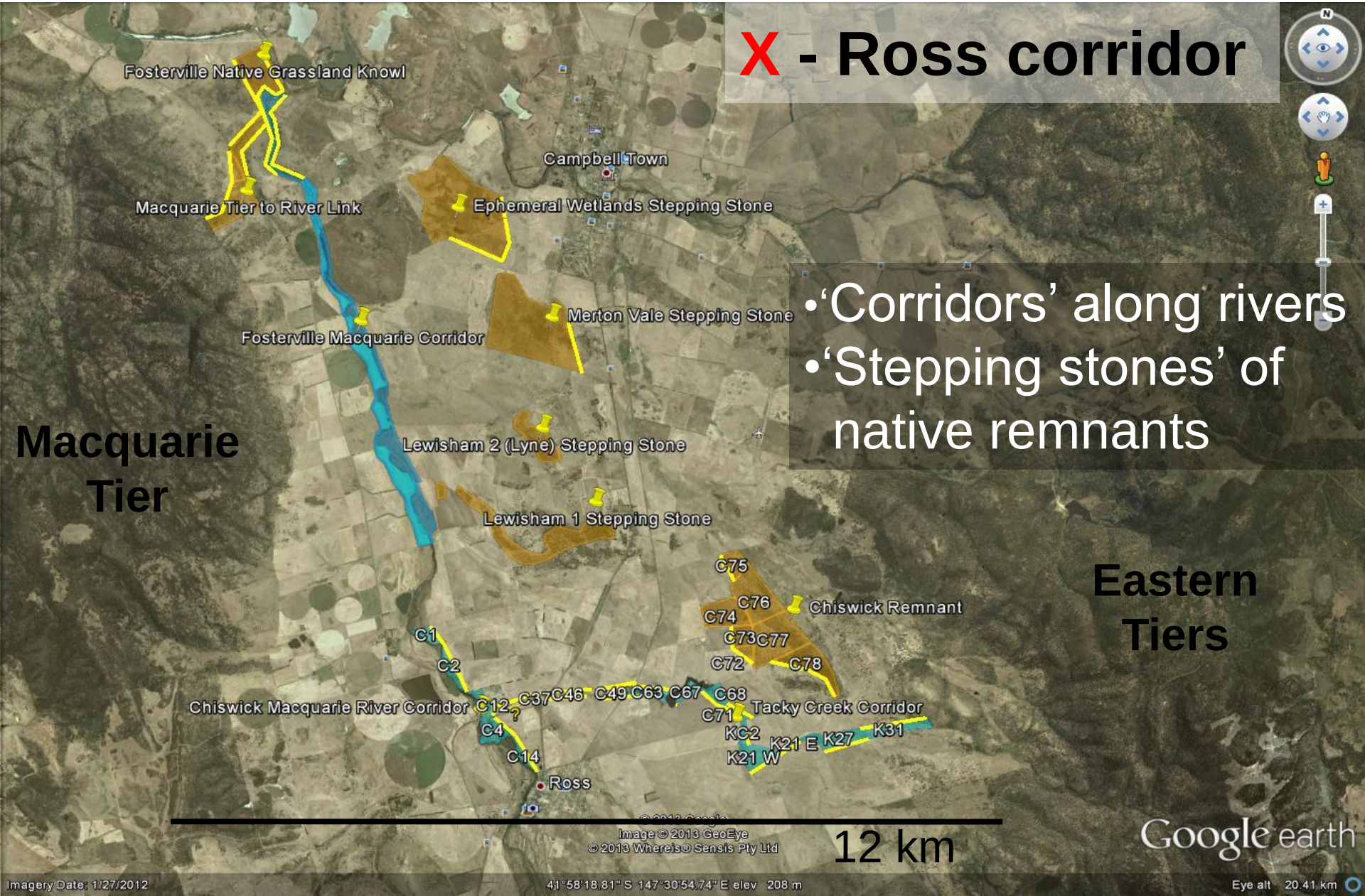
Sites chosen:

X – **Ross corridor**:
Julian von Bibra
('Beaufront')
Simon Foster
('Fosterville')

Y – **Epping corridor**:
Roderic O'Connor
('Connorville')

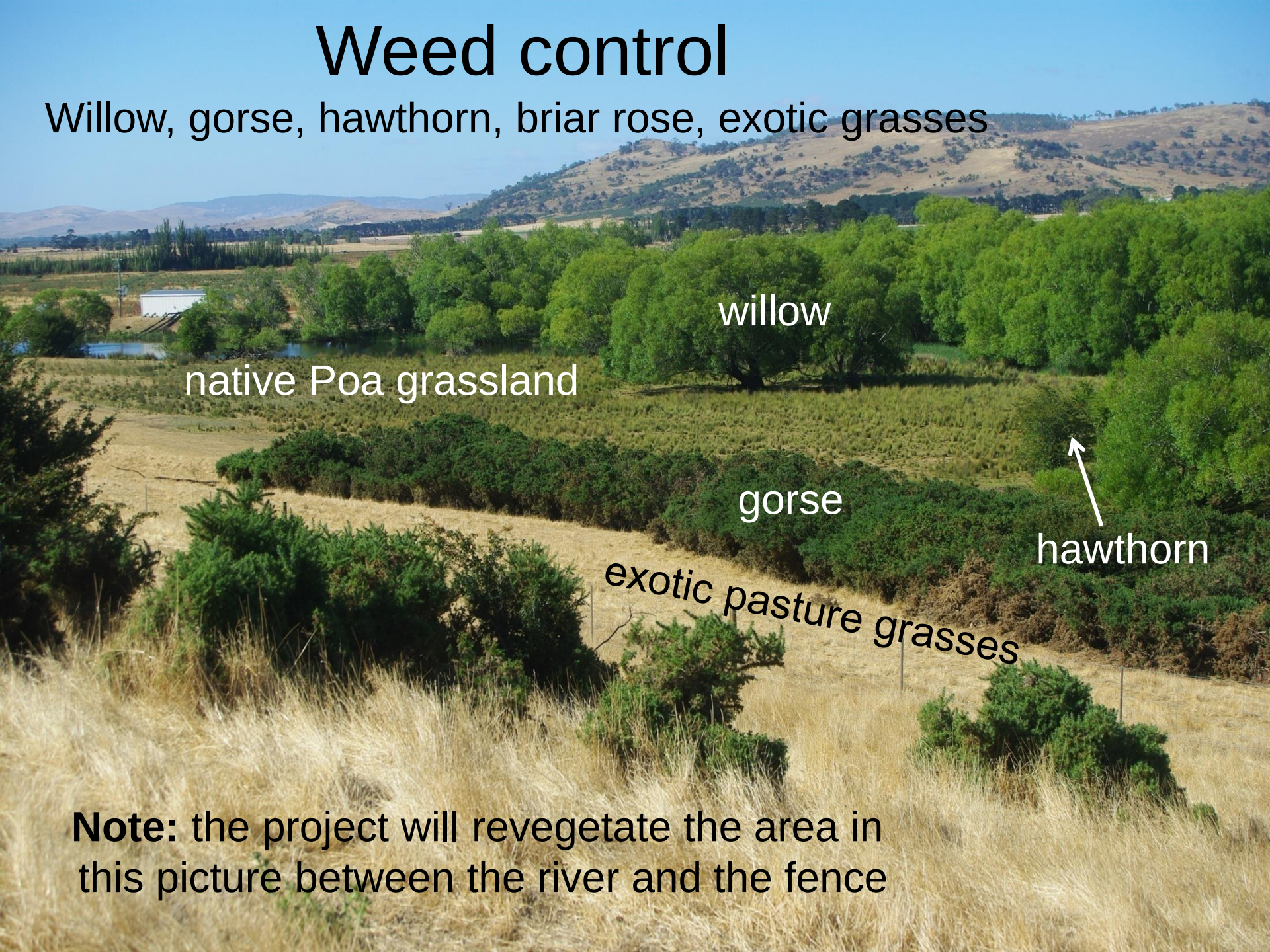


Connectivity on the ground



Weed control

Willow, gorse, hawthorn, briar rose, exotic grasses



Note: the project will revegetate the area in this picture between the river and the fence

Broad - scale woodland revegetation

Greening Australia
www.greeningaustralia.org.au

Transforming our landscapes

Patch - scale
Woodland restoration

Individual trees and groups of 10 trees and shrubs

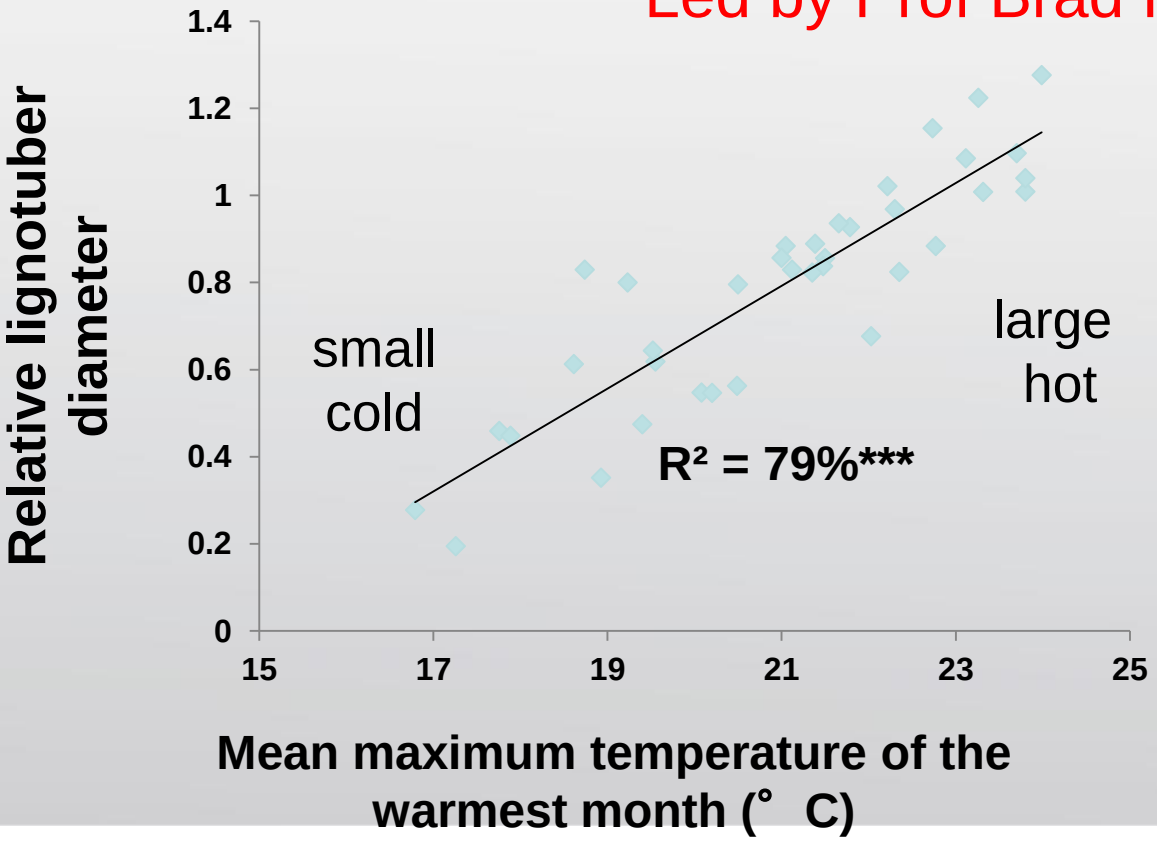
Grassland revegetation using local seed

Monitoring and collaboration with UTas

- Collaborating researchers embed research experiments in existing agreements
- Allows for adaptive management and improvement
- Use of BACI design (before and after control and impact) for revegetation and restoration

UTas (ARC-linkage) studies on genetic variation in *Eucalyptus* and climate change

Led by Prof Brad Potts



% traits associated with climatic factors

38% P<0.001

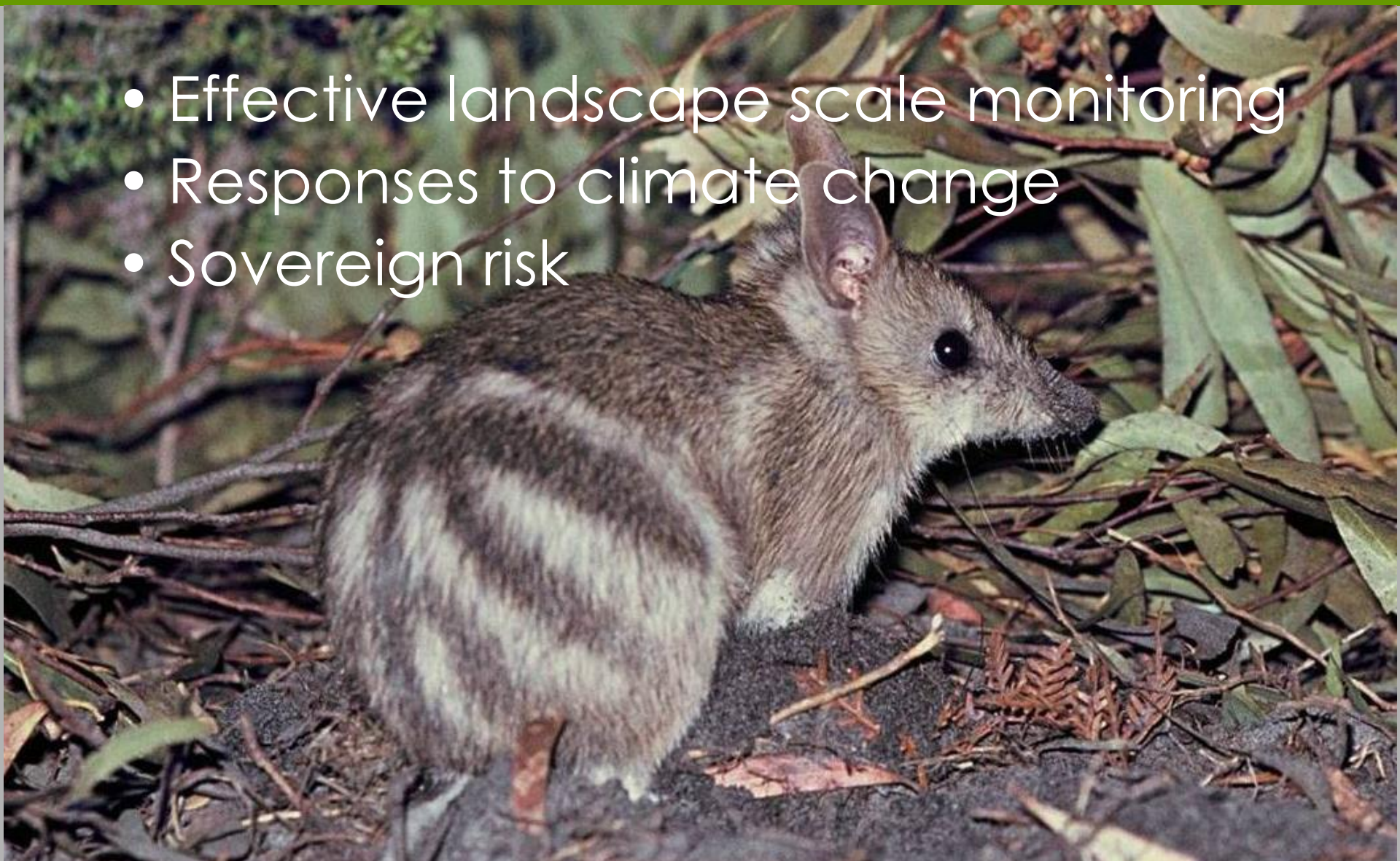
76 % P<0.05

UTas (ARC-linkage) research "Animal centric view of connectivity"

Led by Dr Menna Jones

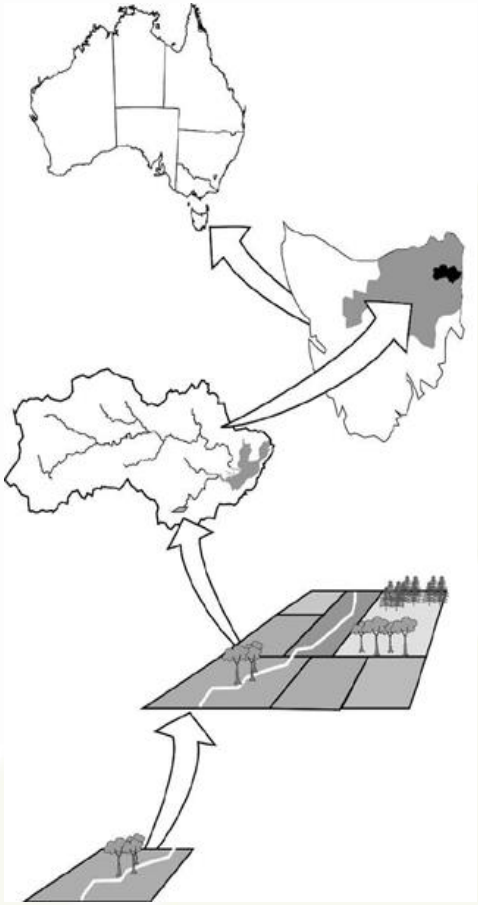
- What do animals see as habitat/not?
- Selected mammals, birds and bats
- Three scales
  - Occupancy using cameras, scats
  - Movement using GPS, giving up density
  - Degree of population isolation using genetics
- Future restoration design

Future challenges



- Effective landscape scale monitoring
- Responses to climate change
- Sovereign risk

Assessing landscape scale change



Scale of Inquiry	Types of evidence		
	Land manager experience	**Expert opinion**	**Quantitative data**
Landscape *pattern*	Interviews, Focus groups, Landscape history workshops	Conceptual models, Bayesian network models	Remote sensing, Snap shot surveys, Space-for-time substitution surveys
Property *people*	Surveys and interviews	Bayesian network models of response to intervention	Census data State and regional investment data
Site *process*	Surveys and interviews	Bayesian network models, State and transition models	Field surveys, Surveillance monitoring

Conclusions

- Collaboration with landowners, Govt., NRM bodies, NGOs, industry assoc. etc.
- Landscape-scale approach regardless of jurisdiction.
- A comprehensive and long-term plan is critical prioritise investments and measure progress towards goals over time.
-
- Financial modelling to attract investment
- Spatial modelling underpinned by sound ecological principles to guide investment

Conclusions

- Endowment fund provides means to perpetually fund long-term conservation agreements and outcomes.
- Analyse & adapt – complete the project management cycle and learn from past actions.
- Careful use of MBIs – balance conservation outcomes vs. value for money.
- Research and monitoring to inform action and adaptation