

Restoration success in SW Western Australia

A/Prof Hedley Grantham
Chief Scientist – Bush Heritage
Joint position with UNSW

Alex Hams
Healthy Landscapes Manager



We acknowledge the Traditional Owners of the places in which we live and work including Ngunnawal and Ngambri peoples where we stand today. We recognise and respect the enduring relationships they have with their lands and waters, and we pay our respects to their Elders, past and present.



Where we work?

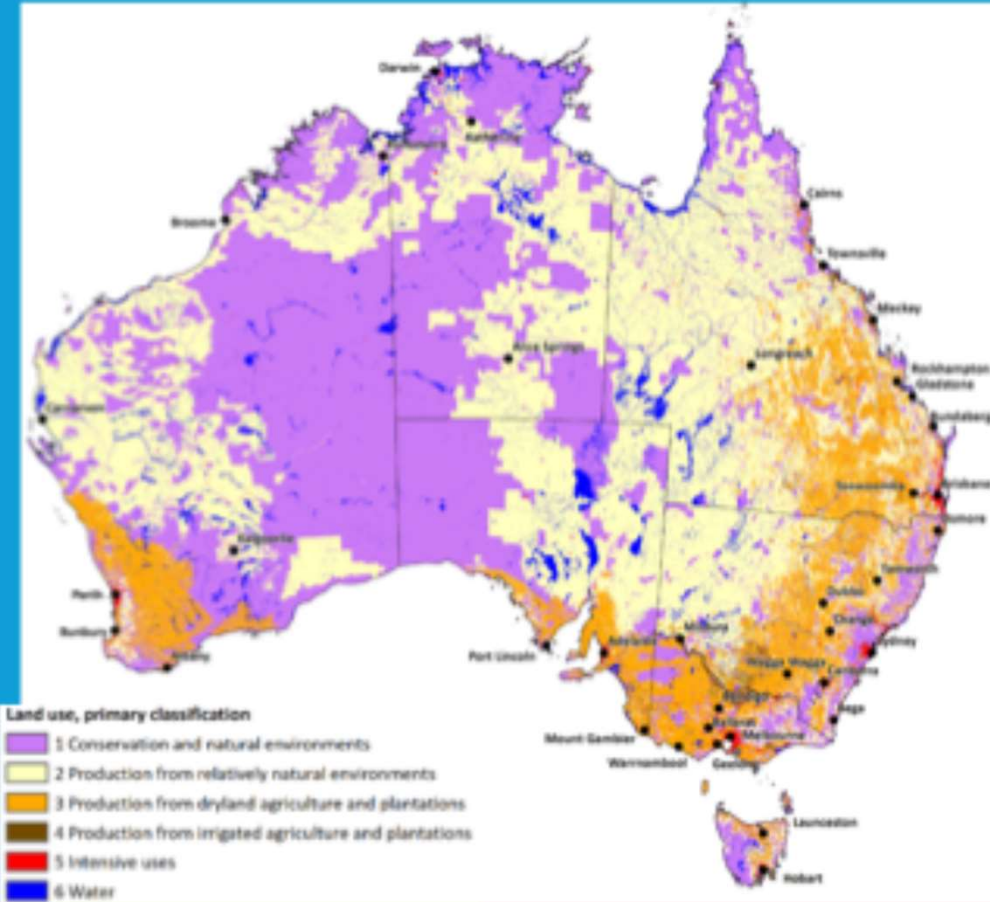
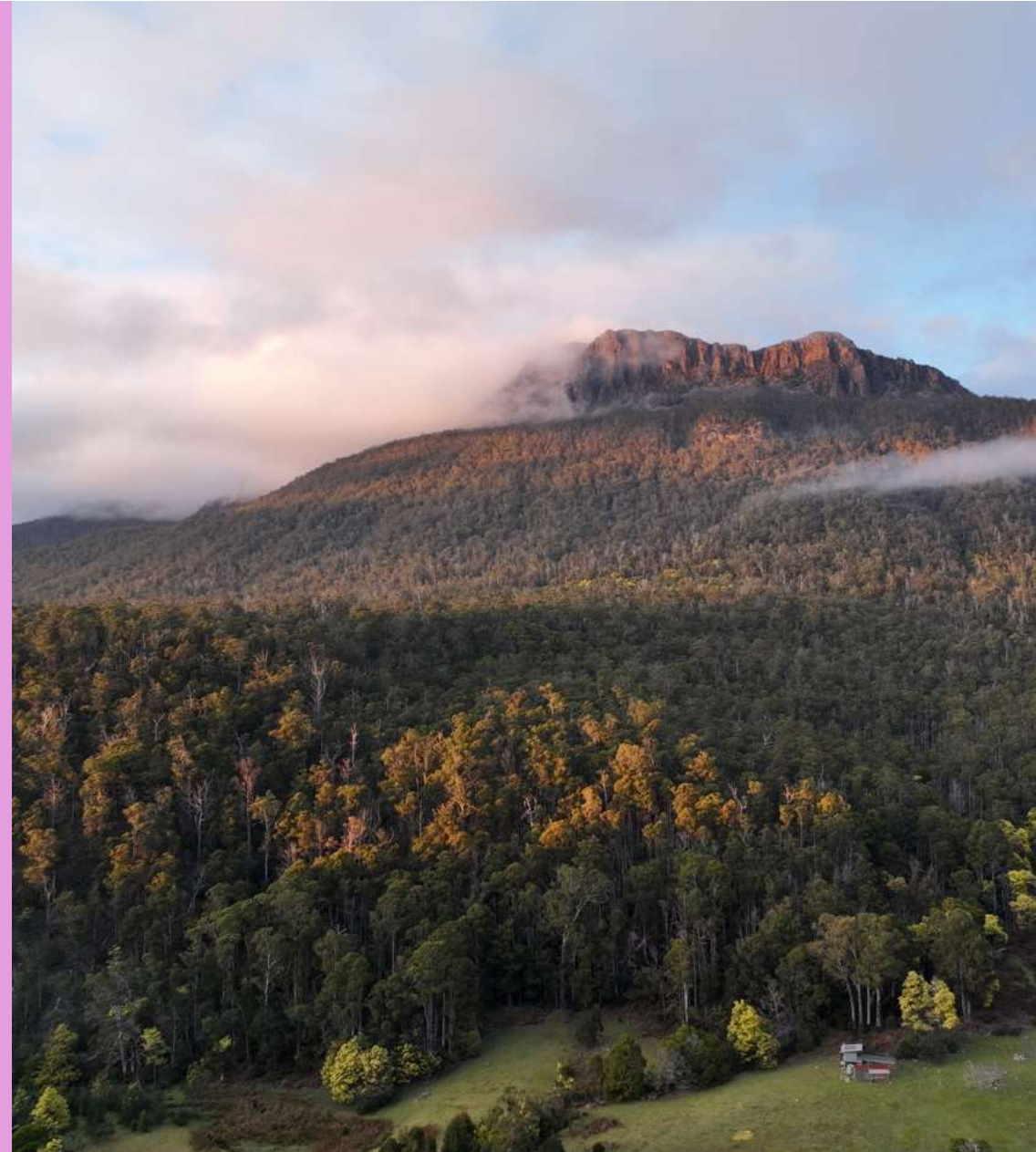


Figure 1. Land use of Australia in 2016 (ABARES, 2022a).

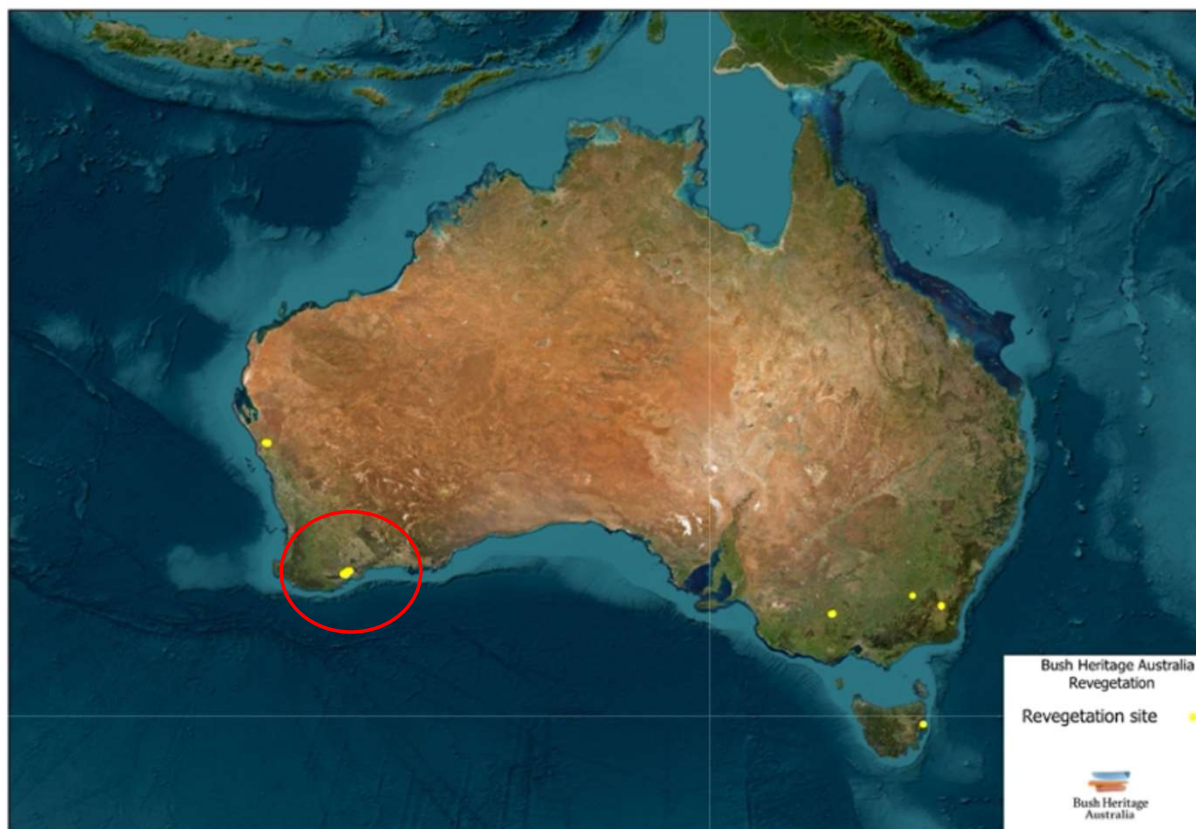


A continuum of restoration strategies required to manage our properties

- Some properties are fairly intact but we still want to improve on their ecological integrity e.g. recover from over grazing, invasive species, appropriate fire regimes etc.
- Some properties purchased are strategically bought for specific purposes (e.g. conservation value, connectivity) that have low ecological integrity need more active restoration

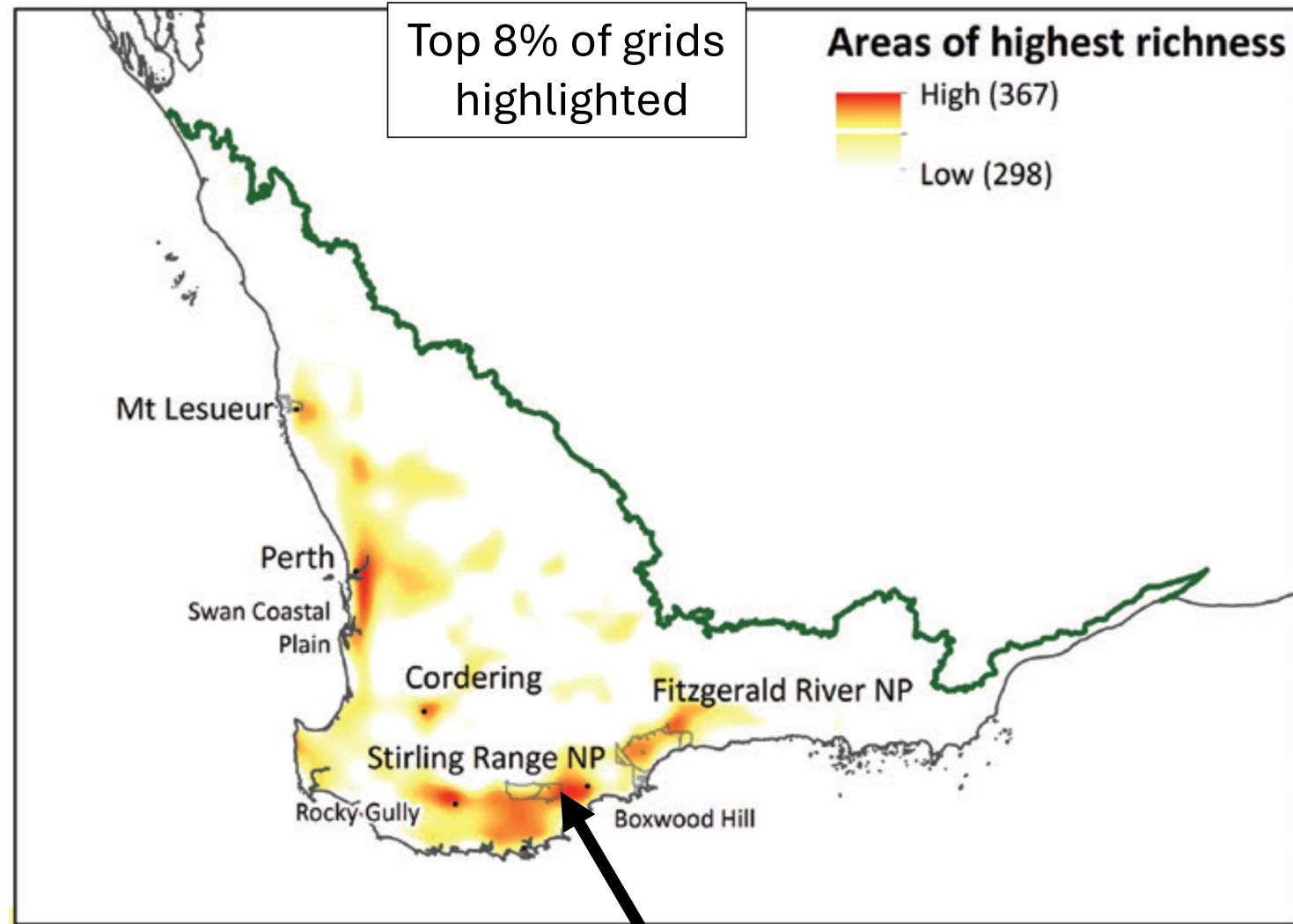


Properties with a strong active restoration focus



Biodiversity Hotspot

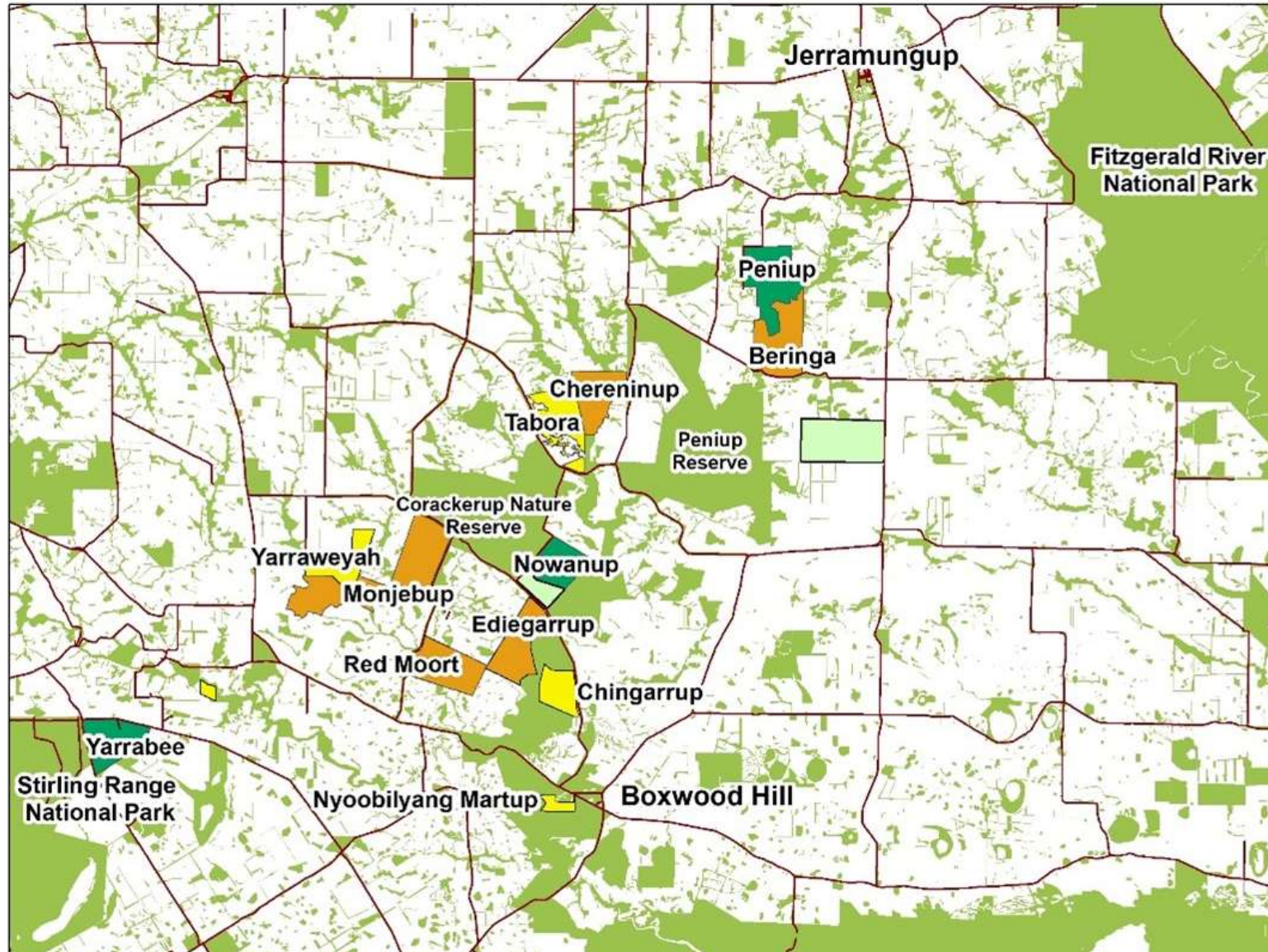
- Species Richness in the SW of WA is some of the highest in the world
- Floral diversity is the key to this hotspot
- Ancient landscape with diverse soil conditions is a key driver
- Remnant vegetation is highly fragmented
- Clearing for agriculture is significant with only 3% of wheatbelt vegetation remaining



FitzStirling Conservation Properties




BUSH HERITAGE
AUSTRALIA



Legend

Reserves Ownership

-  Bush Heritage Australia
-  Greening Australia
-  Private Conservation
-  Carbon Farms
-  Remnant Vegetation



0 5 10 Km

Hotspot within the Hotspot

- Remarkable geographical turnover of >1000 plant species within 6,000 ha
- Many of the remaining areas of bushland retained due to rocky or infertile soils
- Short range endemics common
- Very valuable for conservation

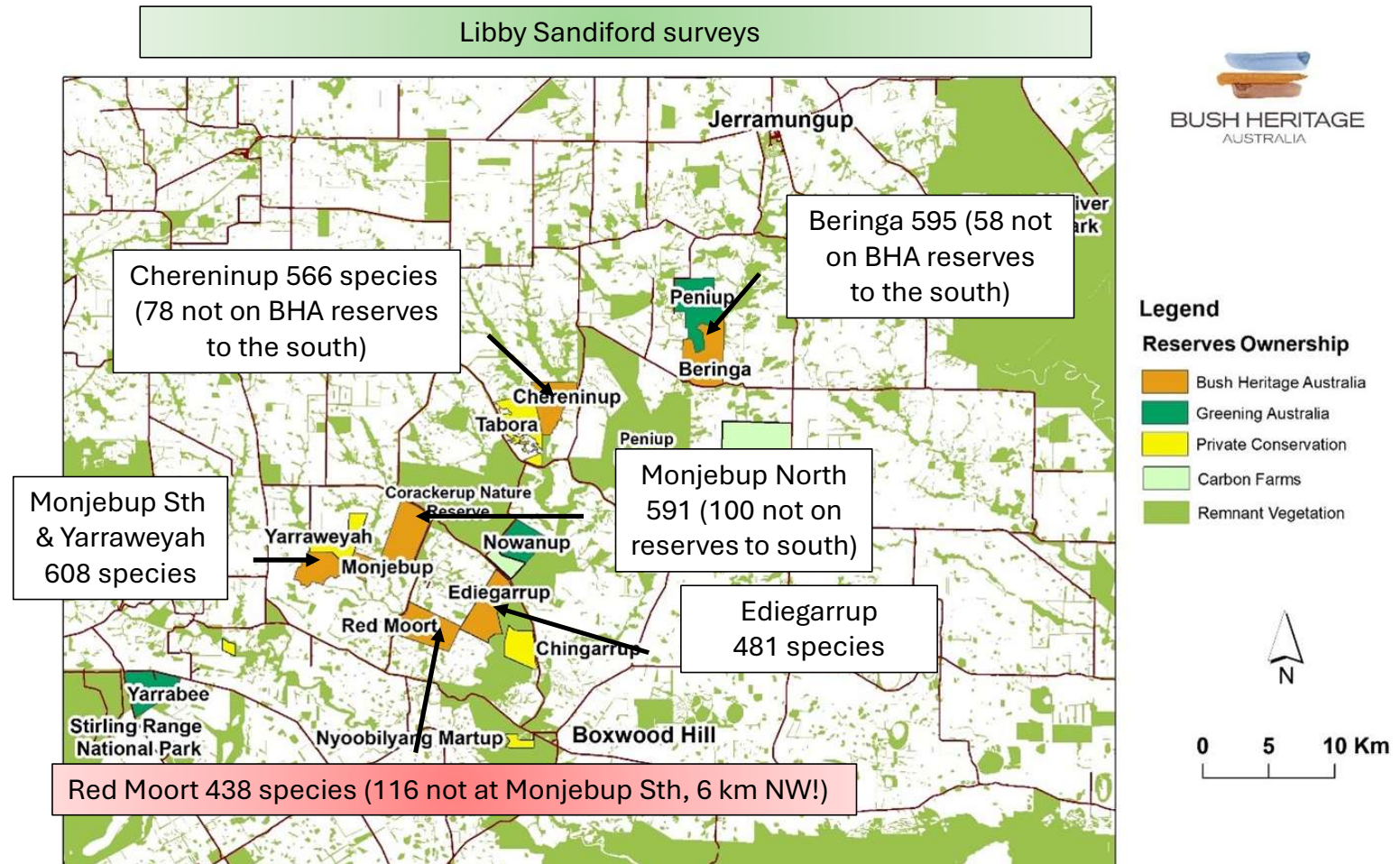
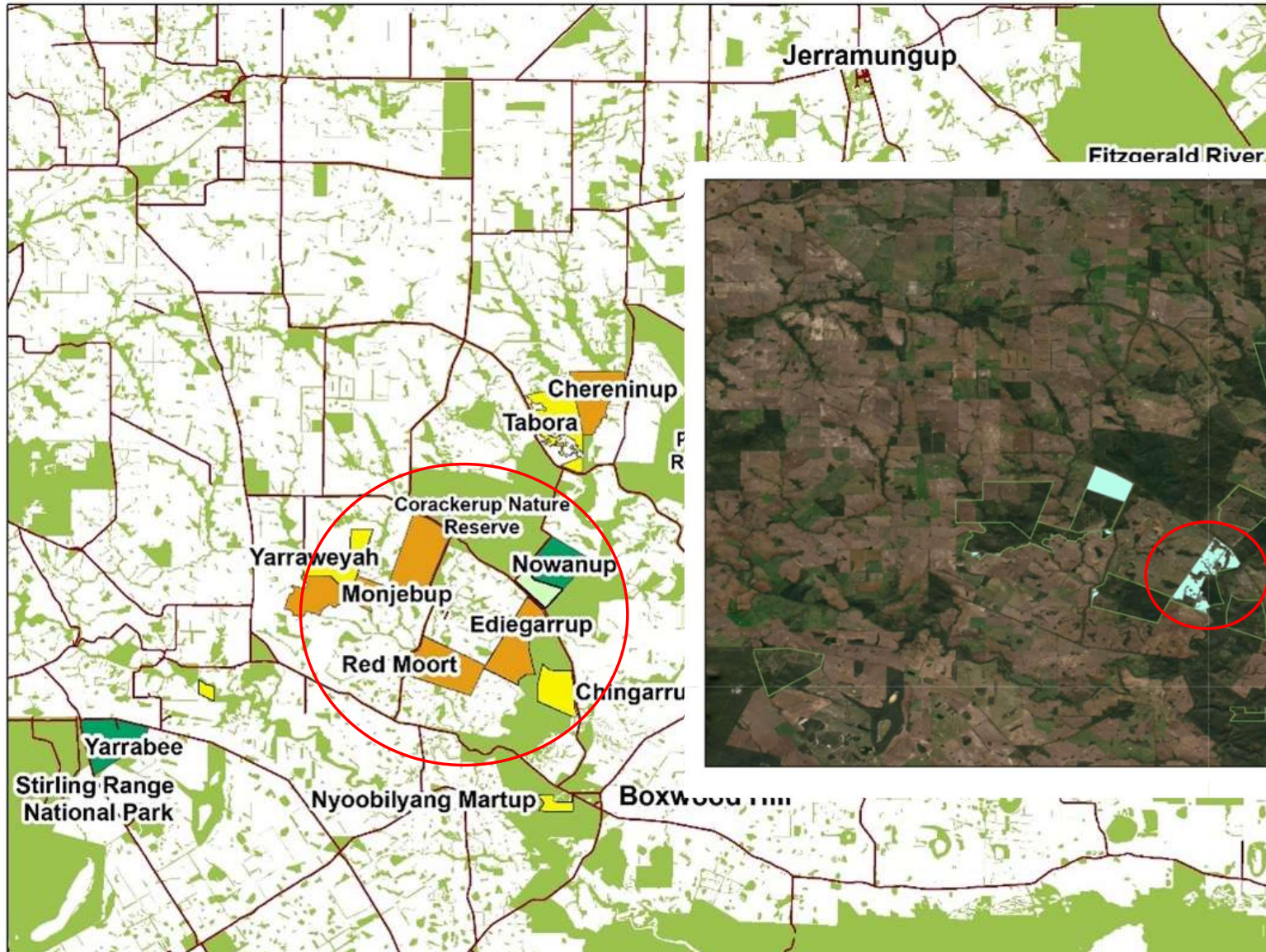


Image: Stephen Hoppe
r

FitzStirling Conservation Properties

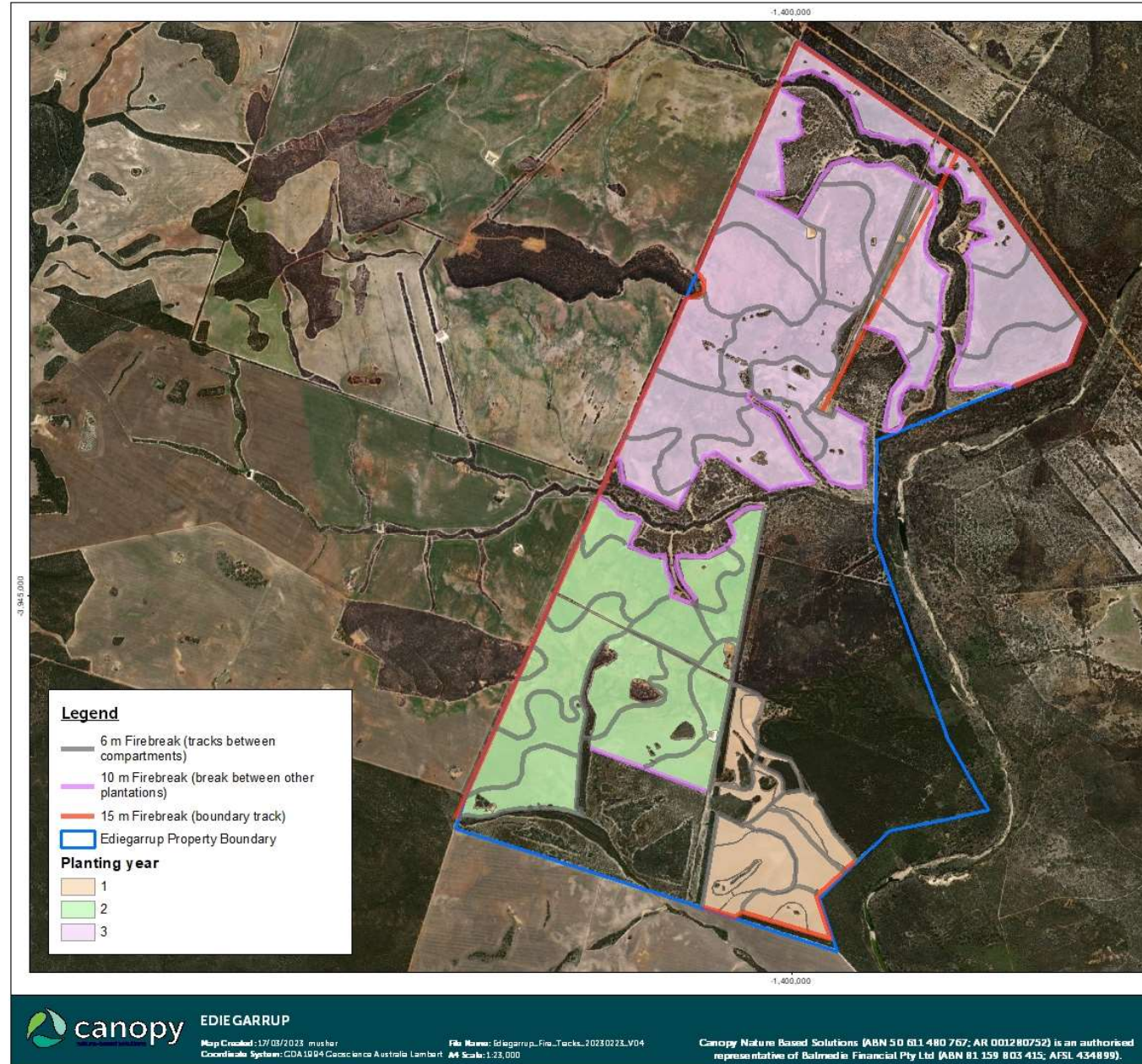


BUSH HERITAGE
AUSTRALIA



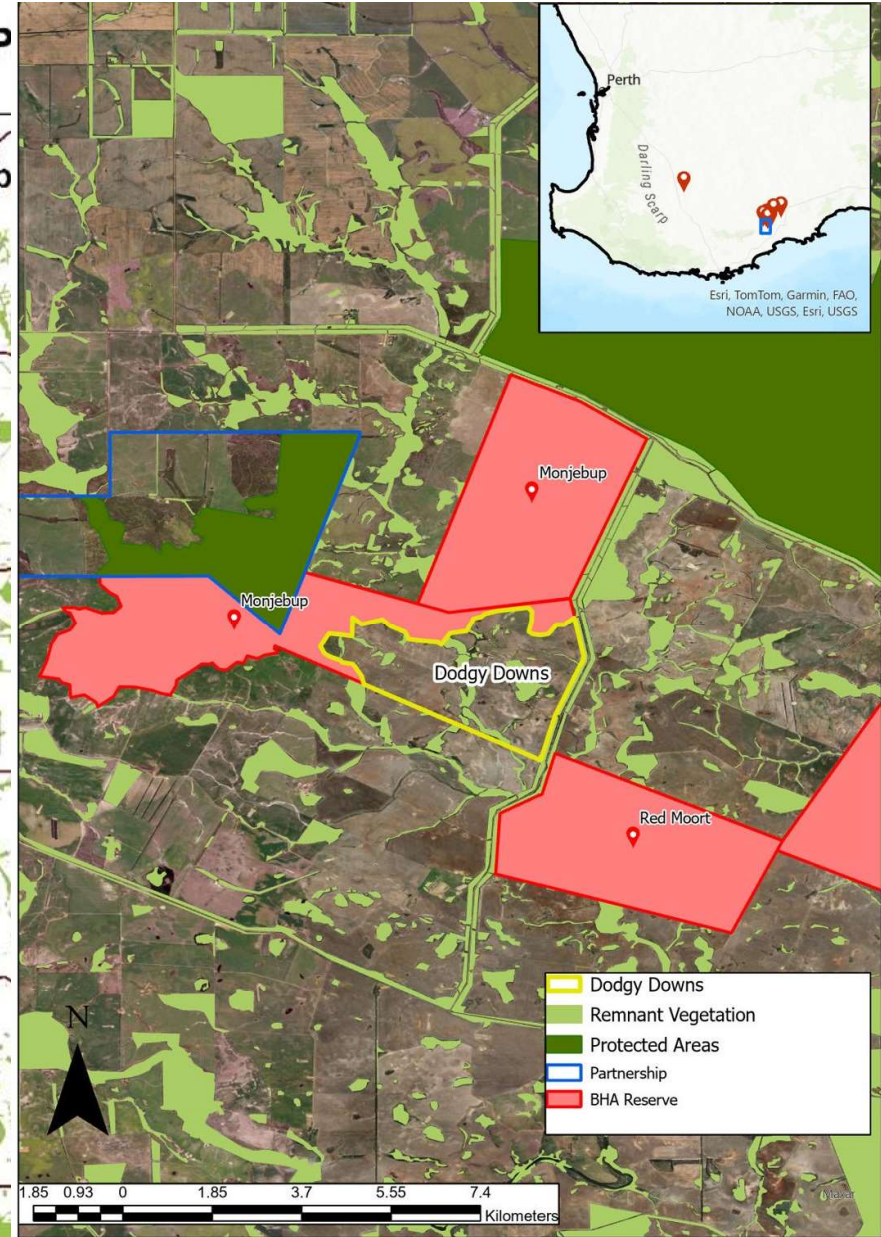
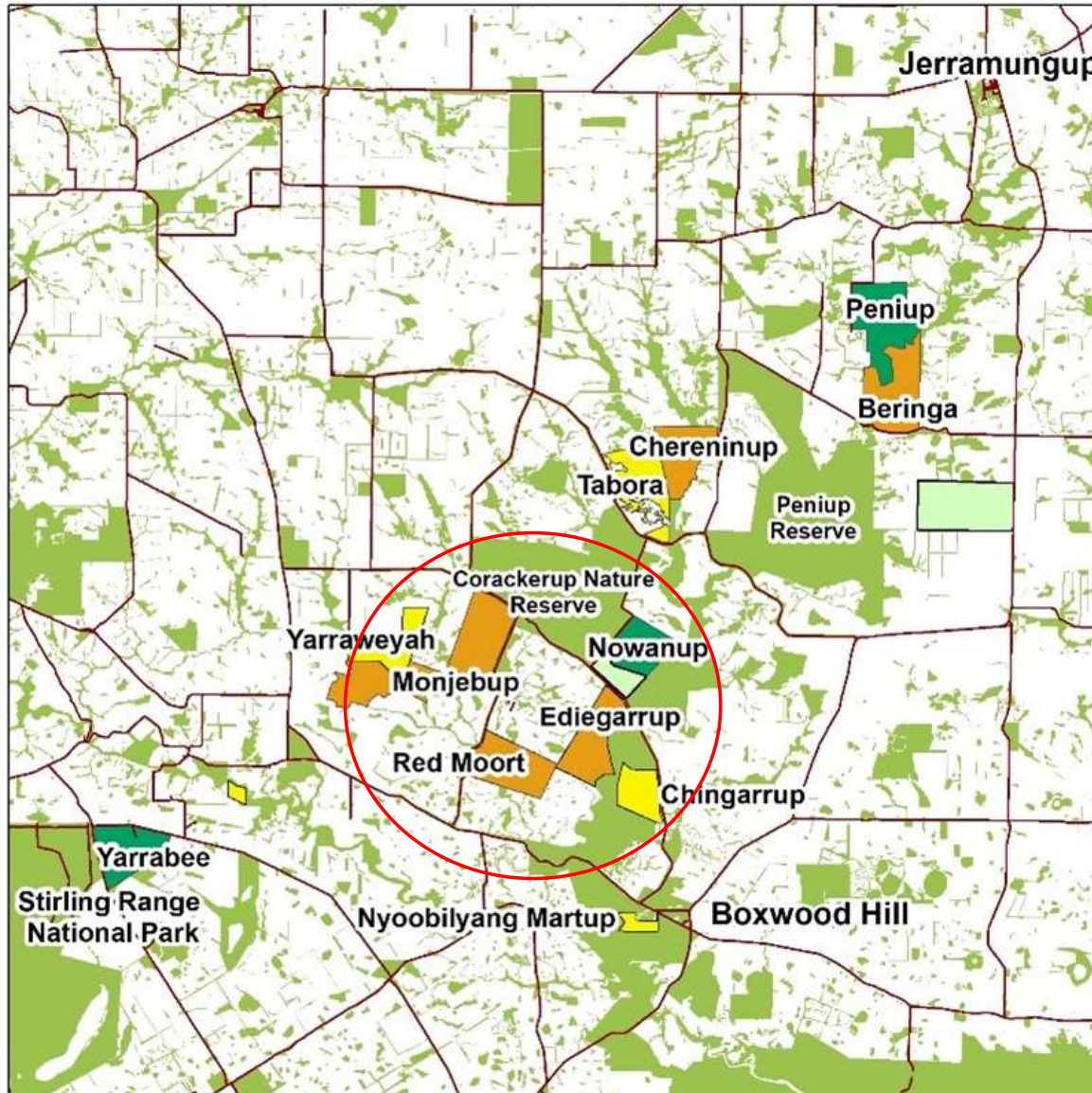
Ediegarrup

- 600ha of low quality cleared land proposed to be restored back to native bushland
- Delivered over 3 years in partnership with Greening Australia and Noongar Rangers
- More than 150 locally sourced species to be planted
- Connecting bushland at Red Moort Reserve with nearby bushland to east and north
- Will support habitat for native species including the threatened Mallefowl, Carnaby's cockatoo and Tammar and Black-gloved wallaby





FitzStirling Conservation P



Climate Ready Revegetation



Study design

- Four climate-adjusted provenances and two local provenances for two *Eucalyptus* species at two Victorian reserves Nardoo Hills and Lawan
- 11,700 trees planted in randomised block design
- Survival, height, and stem diameter recorded annually

Insights after five years

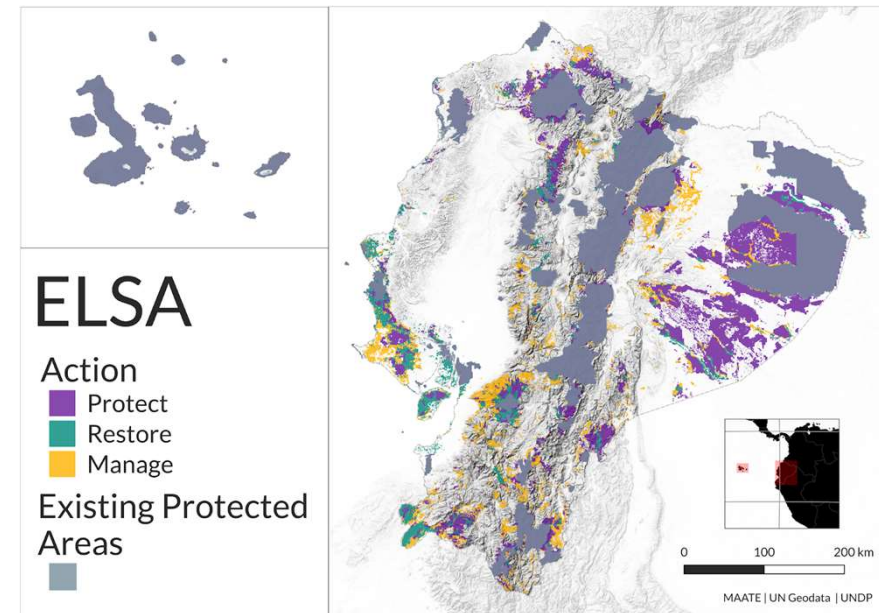
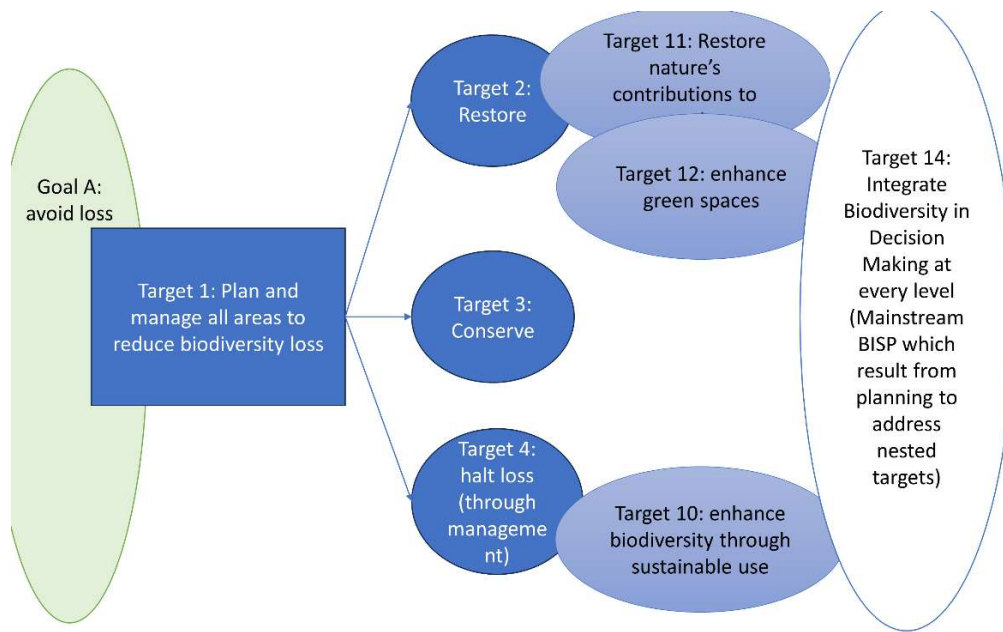
- Local provenances performing as well or better than climate-adjusted provenances (but conditions have been benign)
- Regional-scale influences (reserve of planting) have greater influence on growth parameters than provenance effects

Development of a new species reintroduction program

1. Currently getting started with a strategy framework for reintroductions (e.g.. rationale, feasibility, cost-benefits) with a focus on ecosystem function
2. Then apply the strategy framework across reserves
3. Pilots
4. Long term plan and application across reserves



The need for effective spatial planning



Source: Grantham, Adams, and the IUCN WCPA Taskforce on Spatial Planning

Thank you

hedley.grantham@bushheritage.org.au
h.grantham@unsw.edu.au

