



**Local Land
Services**

NRM Planning for Climate Change South East Climate Adaptation Plan

Introduction

In 2012 the Commonwealth provided funding to 53 natural resource management (NRM) organisations across Australia

Titled ‘Regional Natural Resource Management Planning for Climate Change’, the task was to update existing NRM plans to make them ‘climate ready’





Identify and prioritise investment that delivers multiple beneficial outcomes

Southern East Local Land Services developed a series of tools to prioritise future investment

- Connectivity Mapping
- Extreme event sensitivity modelling
- HGL Landscape mapping (revegetation and salinity)
- Community Capacity Assessment

Connectivity mapping project

Joint project - South East LLS, Office of Environment and Heritage and University of New England

Started October 2013, and completed in 2015

Project objective: identify areas where maintaining or improving connectivity of native vegetation will best support those species most sensitive to landscape fragmentation

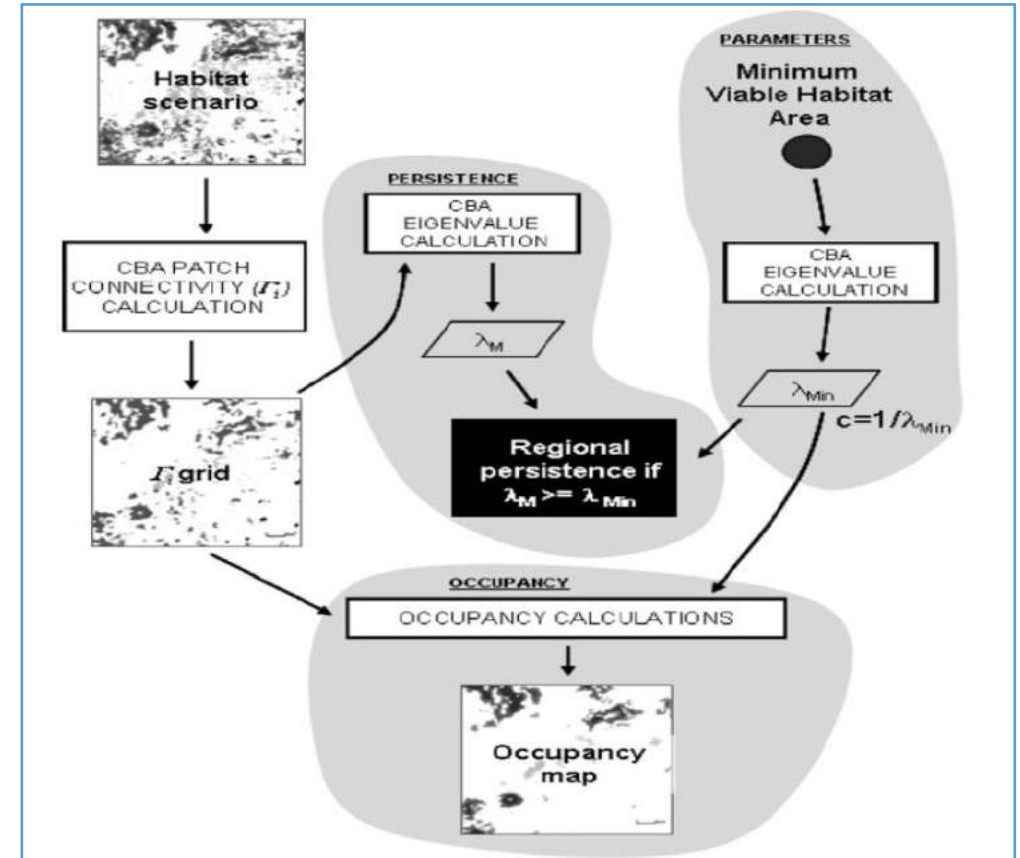


Connectivity mapping project

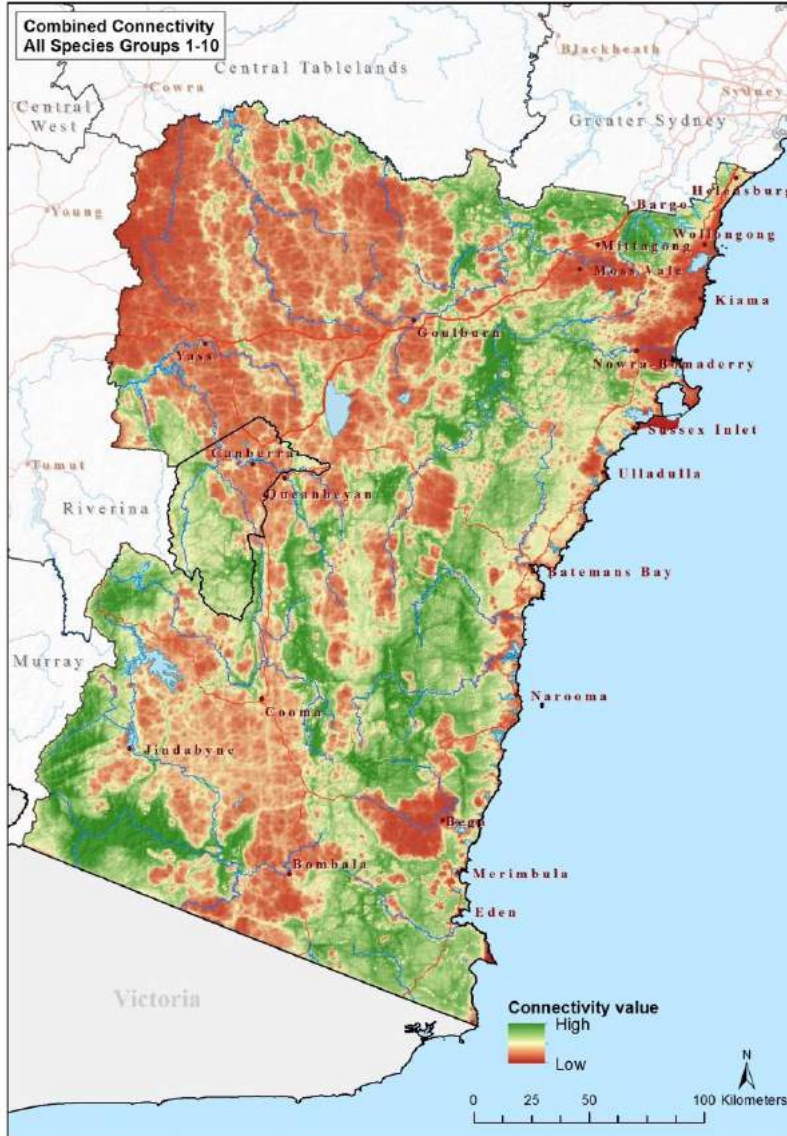
Connectivity modelling was performed for ten different species groups using the LINKS least cost paths analysis technique

This method considers accessibility, permeability, and dispersal distances for species within target groups

- Wet and dry forest species (limited dispersal)
- Wet and dry forest species (intermediate dispersal)
- Woodland and dry forest species (limited dispersal)
- Woodland and dry forest species (intermediate dispersal)
- Woodland and dry forest species (high dispersal)
- Open woodland species (limited dispersal)
- Open woodland species (intermediate dispersal)
- Open woodland, high dispersal grassland, paddock tree, aerial species, raptors (high dispersal)
- Grassland species (limited dispersal)
- Grassland species high dispersal)

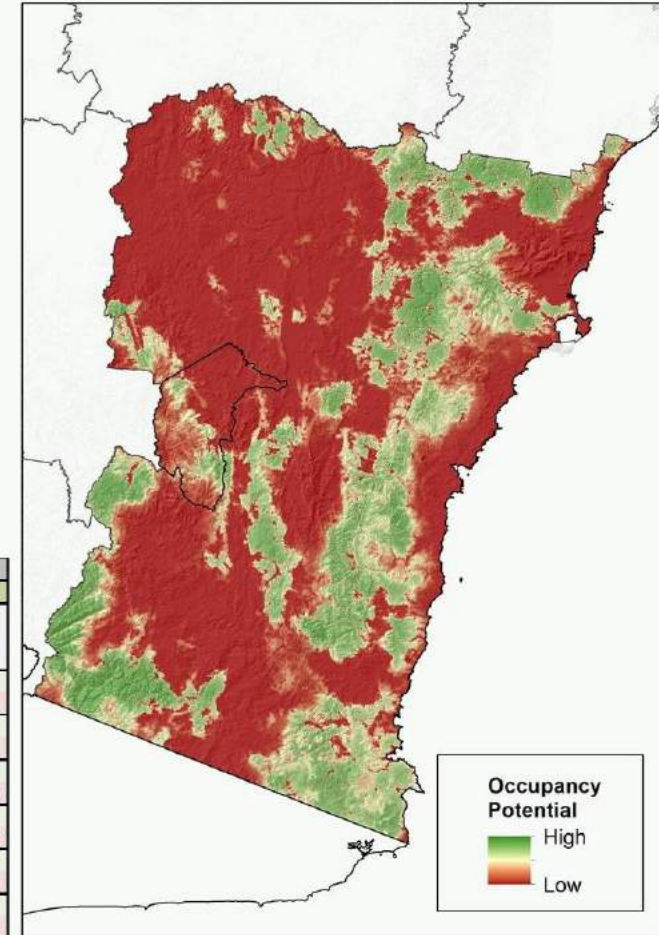
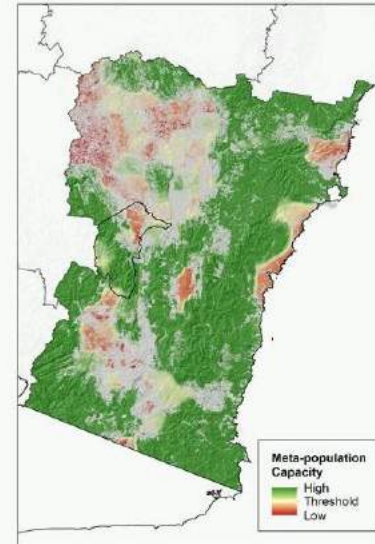
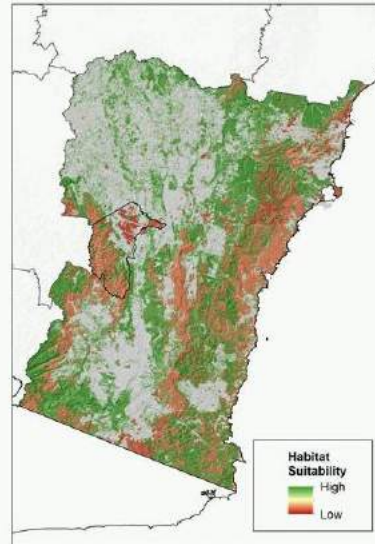


Results!



F05 Woodland and Dry Forest Species (high dispersal)

Representative Species include: Glossy Black-Cockatoo, Gang-gang Cockatoo (post-breeding), Barn Owl, Pallid Cuckoo, Dollarbird, Laughing Kookaburra, Sacred Kingfisher, Black-faced Cuckoo-shrike, Rufous Whistler, Hooded Robin, Scarlet Robin, White-throated Gerygone, Western Gerygone, Weebill, Yellow-faced Honeyeater, White-naped Honeyeater, White-eared Honeyeater, Regent Honeyeater, Noisy Miner, Eastern Spinebill, Red Wattlebird, Noisy Friarbird, Painted Honeyeater, Mistletoebird, Brush Cuckoo (post-breeding), Fan-tailed Cuckoo (post-breeding), Horse-field Bronze-cuckoo (post-breeding), Golden Whistler (post-breeding)



Woodland and dry forest species (high dispersal)									
MVH: 1250		Habitat							
Habitat Suitability	Removed or Highly Modified	Crops Exotic/Mixed Pasture	Moderately Modified Non Woody	Native Grasslands Non Woody	Woodlands Scattered Trees	Woody Production	Woody Modified Native	Formally Protected	
Foraging Distance	Dispersal Distance								
Wetlands and Riparian	0 120 720	0 100 600	0 100 600	0 100 600	0 100 600	0 90 540	0 95 570	0 100 600	
Grasslands	5 120 720	0 100 600	0 100 600	0 100 600	90 100 600	10 90 540	0 95 570	0 100 600	
Woodlands and Paddock Trees	5 120 720	0 100 600	0 100 600	0 100 600	90 400 2400	10 360 2160	86 380 2280	90 400 2400	
Dry forest Grassy and Shrubby	5 120 720	0 100 600	0 100 600	0 100 600	90 400 2400	10 360 2160	95 380 2280	100 400 2400	
Wet Forest and Rainforest	5 120 720	0 100 600	0 100 600	0 100 600	90 400 2400	10 360 2160	19 380 2280	20 400 2400	
Heathlands	5 120 720	0 100 600	0 100 600	0 100 600	90 300 1800	10 225 1350	5 238 1425	5 250 1500	



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Identify and prioritise 'no regrets' actions

HGL Landscapes Mapping Project

Identify areas where plantings / bio-sequestration activities will have a positive or negative impact on water quality and salinity

HGL Characteristics

Rainfall

Catchment

Dilution impact

Vegetation level w/n catchment

Sensitivity to changes in climate



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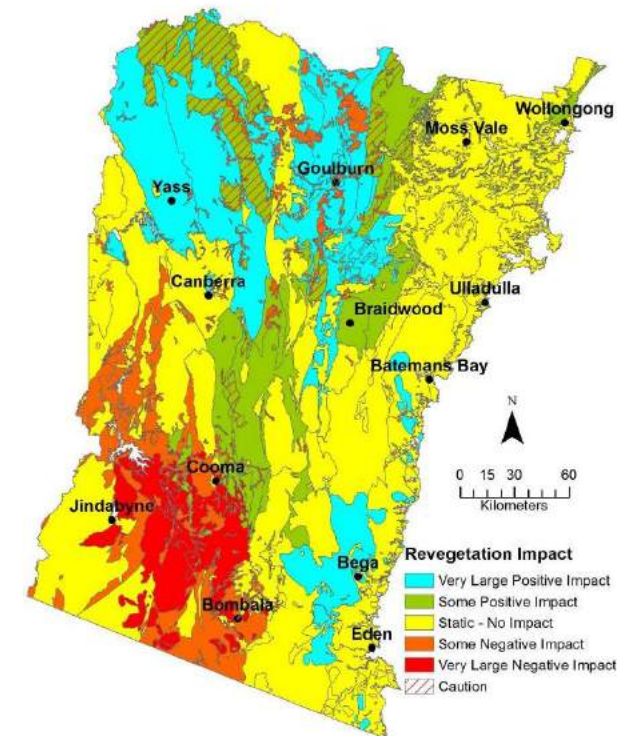
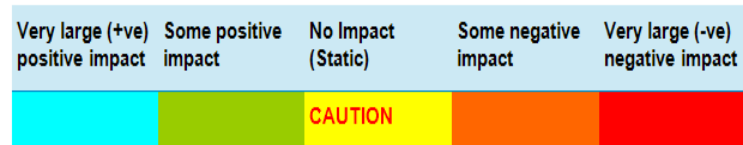
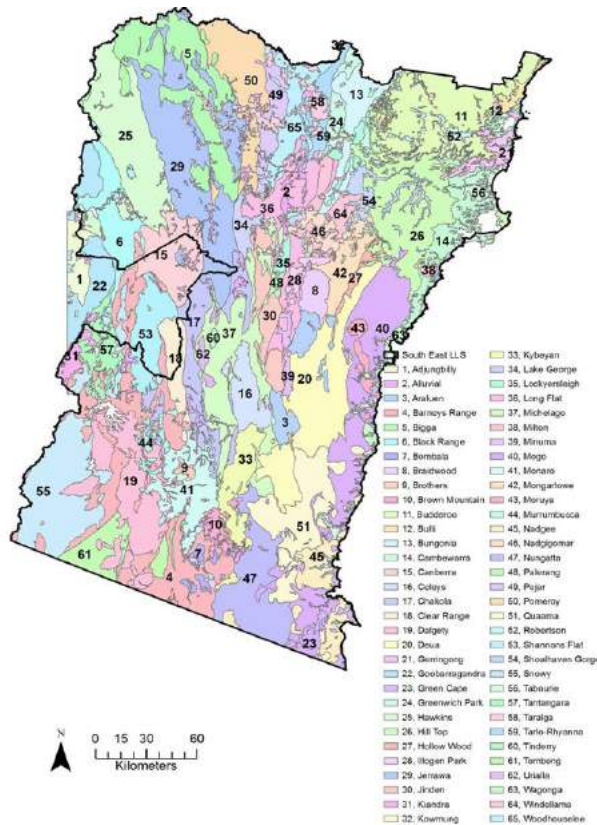


Simplicity is key to success

HGL Landscapes Mapping Project

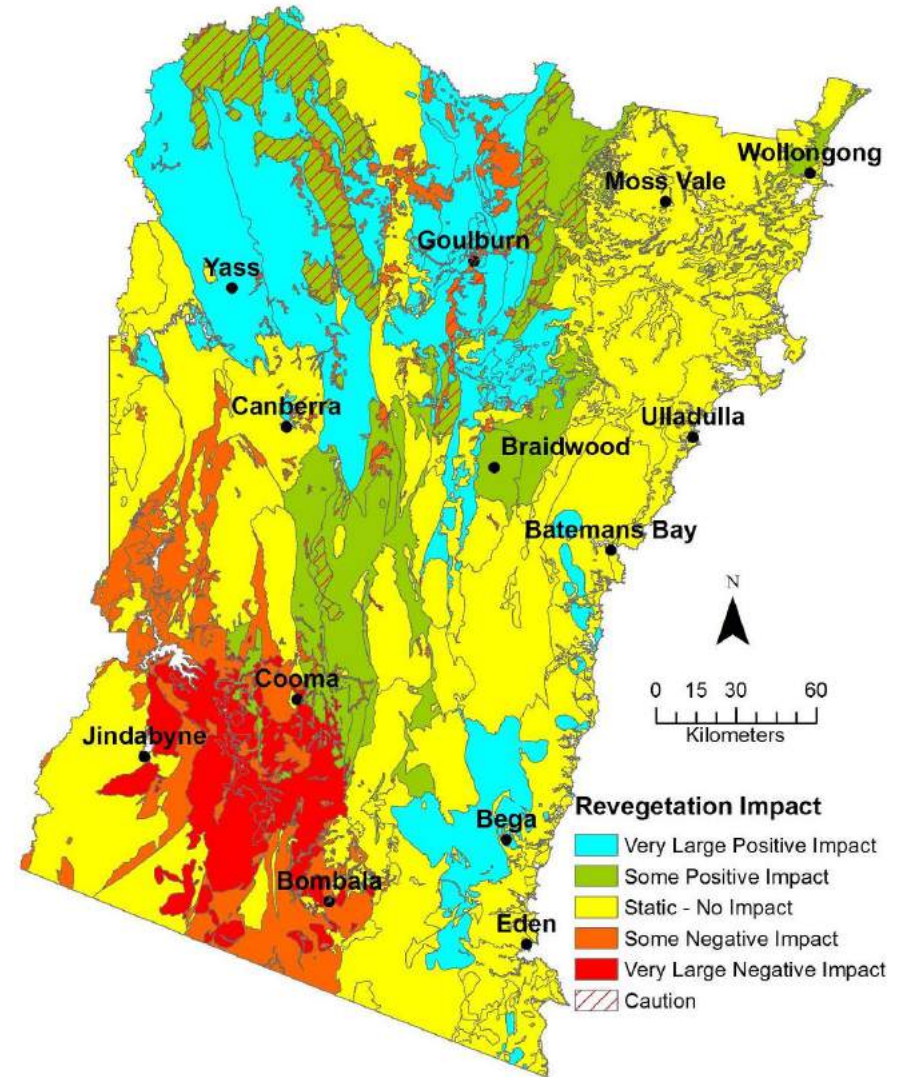
65 hydro-geological landscapes defined

'Red-light' 'Green light' approach was used to simplify

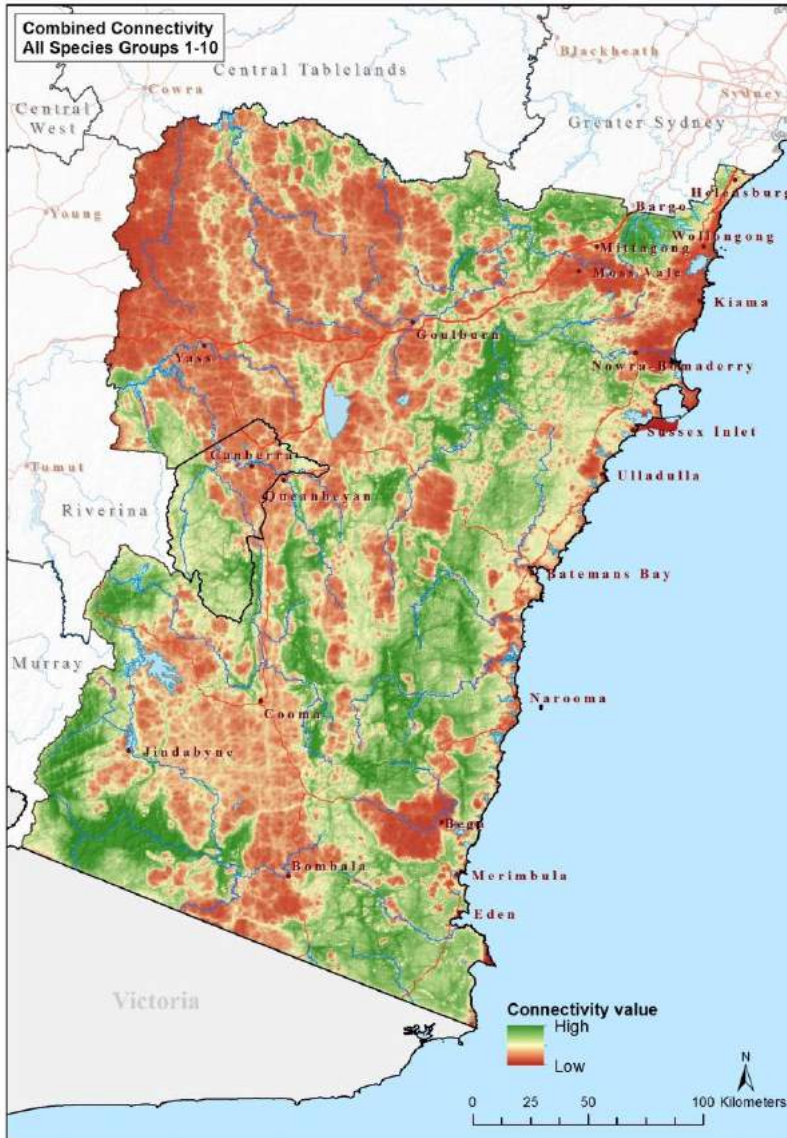


HGL Landscapes Mapping Project

Very large (+ve) positive impact	Some positive impact	No Impact (Static)	Some negative impact	Very large (-ve) negative impact
		CAUTION		

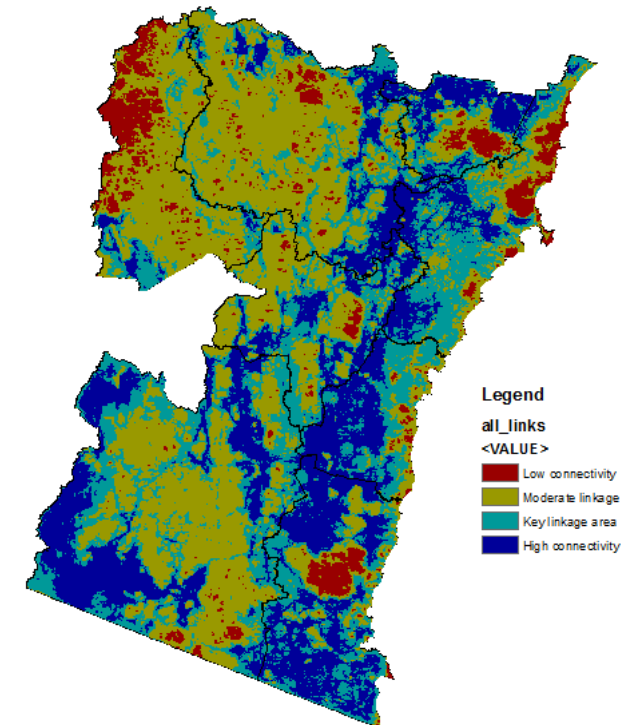


Connectivity mapping project

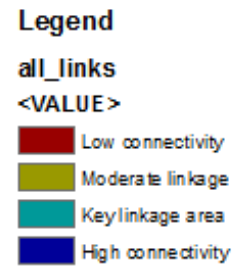
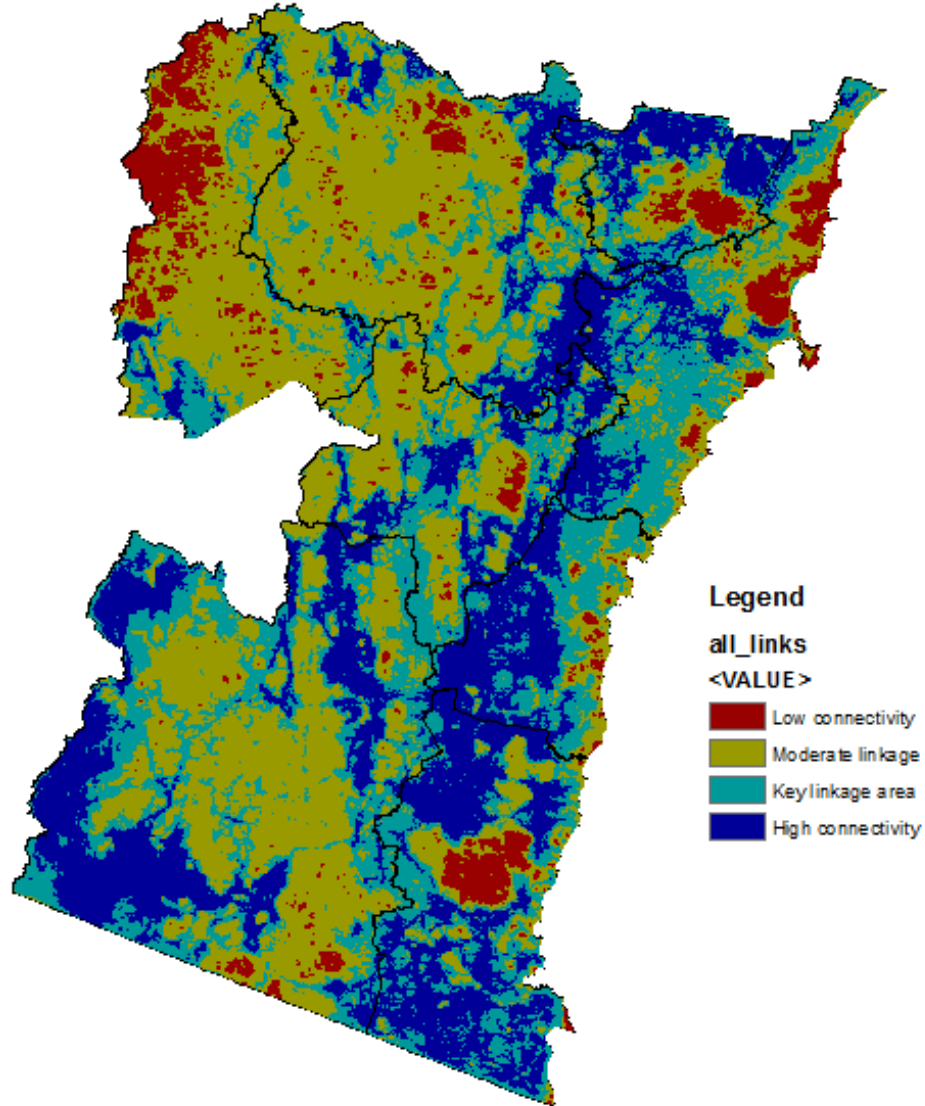


Highly detailed connectivity map
Zones were used to distinguish different levels of connectivity

Connectivity Zone	Management actions											
	Restoration	Revegetation	Private land management	Use of riparian zone for grazing	Private land use	Recreation and recreation	Recreation and recreation	Recreation and recreation	Recreation and recreation	Recreation and recreation	Recreation and recreation	Recreation and recreation
Core habitat	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Key linkage zone: Build up habitat.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Moderate linkage - possibly the priority area?			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low connectivity					✓	✓	✓	✓	✓	✓	✓	✓



Connectivity mapping project



		Management actions											
		Maintain extent	Maintain condition	Promote natural regeneration	Increase complexity / diversity of vegetation	Fill canopy gaps >100m	Respond to key threats from weeds, pests and disease	Respond to key threats from extreme climate events	Avoid removal of vegetation	Increase patch size of existing vegetation	Create stepping stones through the landscape	Local vegetation near higher value connectivity zone	Integrate production and conservation in primary production
Connectivity Zone	Core habitat	✓	✓	✓			✓	✓					
	Key linkage zone. Build up habitat.		✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Moderate linkage - possibly the priority area?			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Low connectivity						✓	✓	✓	✓		✓	✓

PART FIVE: Thank you!

