

BARRINGTON TO HAWKESBURY CLIMATE CORRIDORS

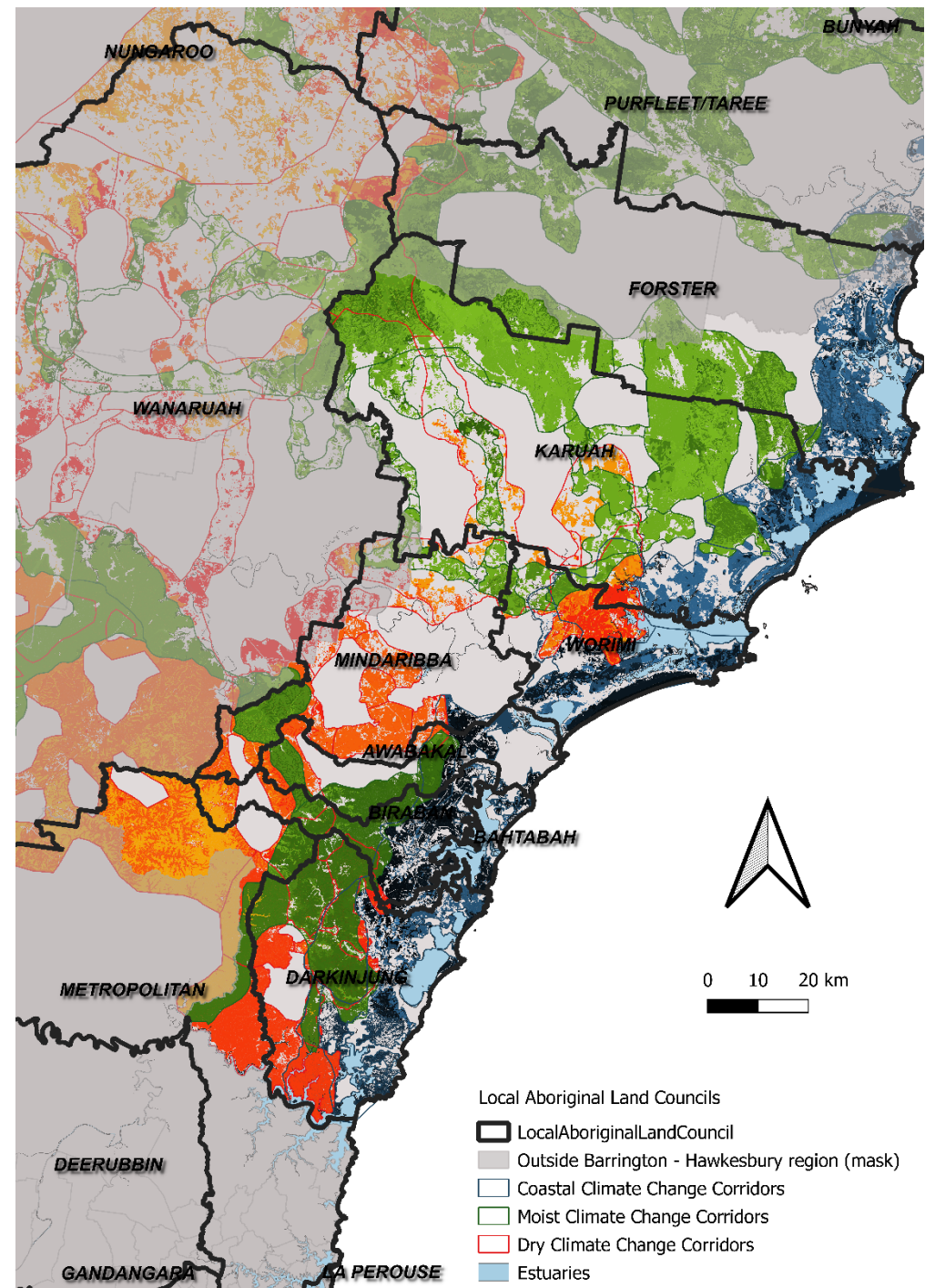
*Connecting regional climate change refugia for
native species' persistence in a warming world*

BARRINGTON TO HAWKESBURY CLIMATE CORRIDORS ALLIANCE 2022

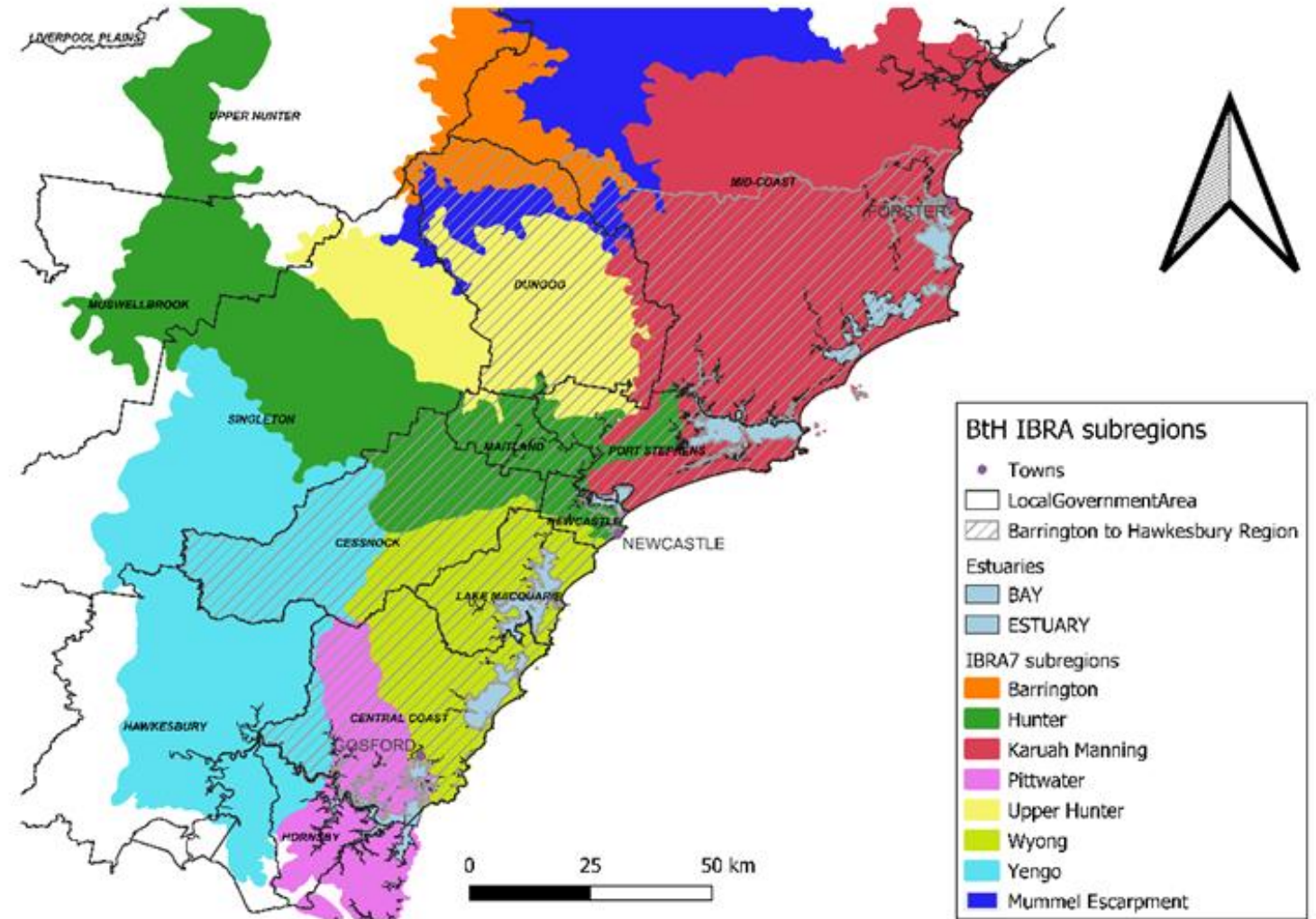
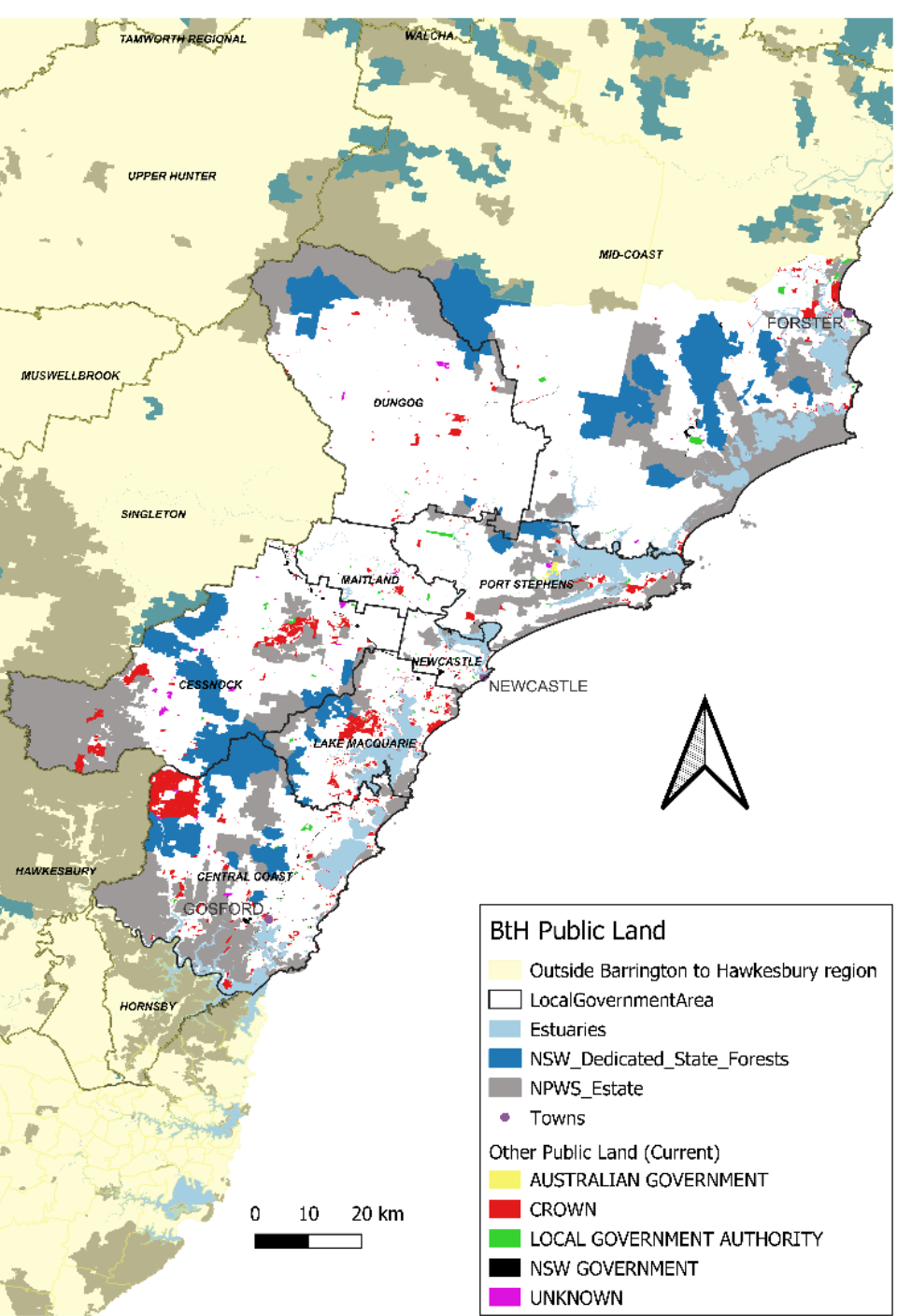


Acknowledgement of Awabakal Country

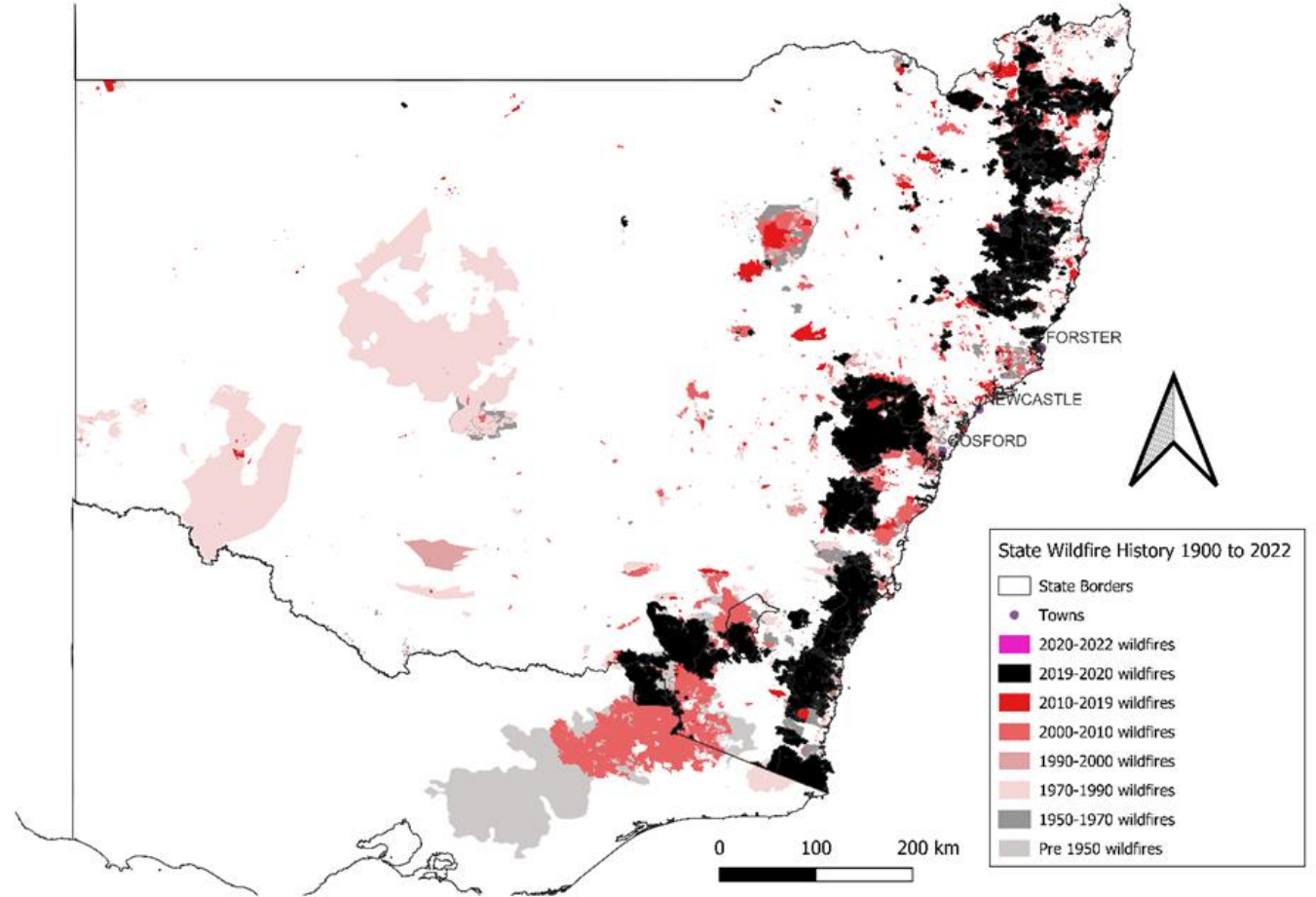
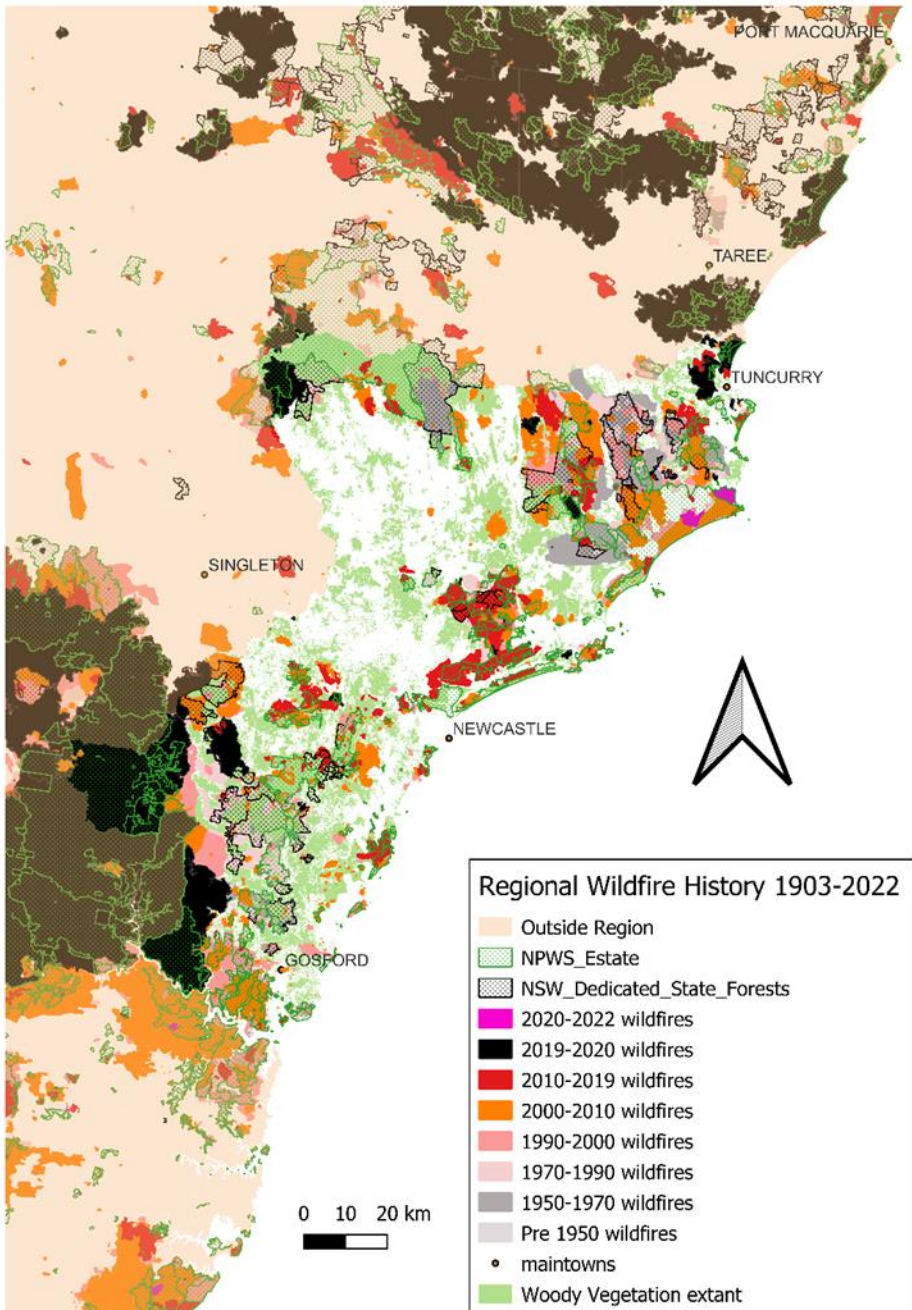
The Local Aboriginal Land Councils of Foster, Wanaruah, Karuah, Wonnarua, Worimi, Mindaribba, Awabakal, Birabah, Batabah and Darkinjung encompass Barrington to Hawkesbury



Barrington to Hawkesbury

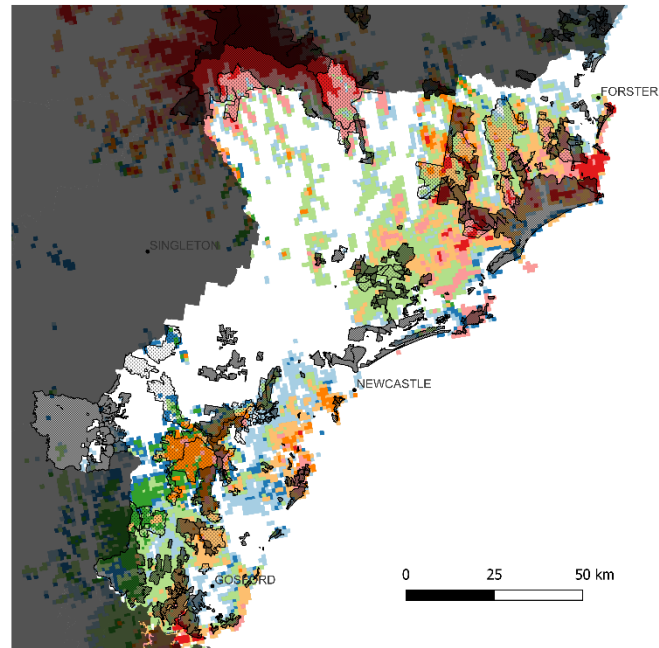


Black Summer



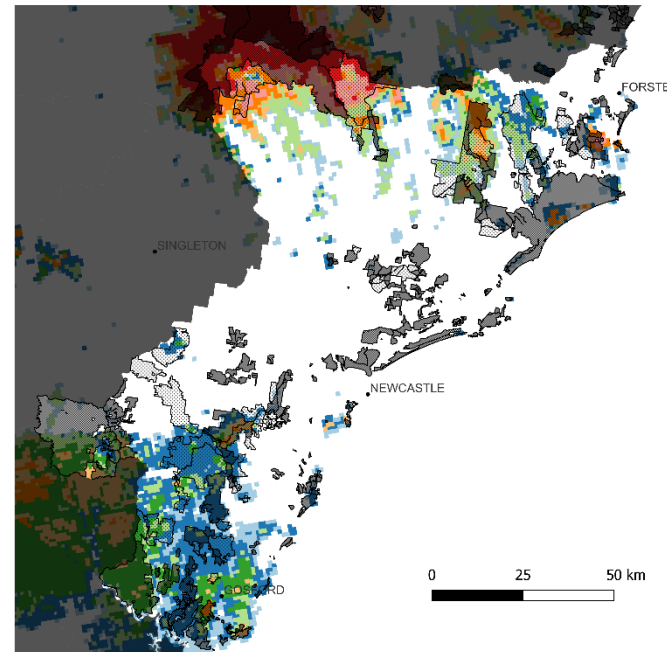
Mammal habitat 2070

Eastern Pygmy Possum



- State Forest all
- NPWS_all
- BTW MAIN TOWNS
- AUS_adm2
- Eastern Pigmy Possum 2070
 - 3
 - 4
- Eastern Pigmy Possum 2050
 - 3
 - 4
- Eastern Pygmy Possum 2030
 - 3
 - 4
- Eastern Pigmy Possum 2020
 - 3
 - 4

0 25 50 km

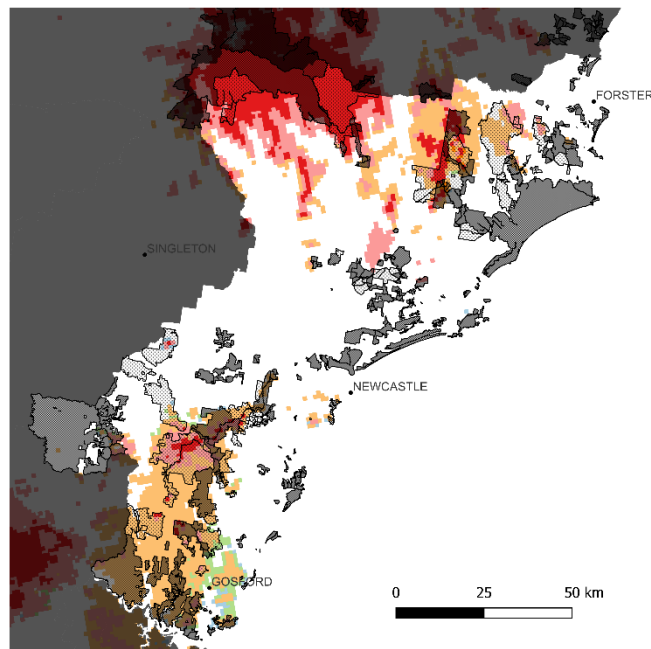


- State Forest all
- NPWS_all
- BTW MAIN TOWNS
- AUS_adm2
- Tiger Quoll 2070
 - 3
 - 4
- Tiger Quoll 2050
 - 3
 - 4
- Tiger Quoll 2030
 - 3
 - 4
- Tiger Quoll 2020
 - 3
 - 4

0 25 50 km

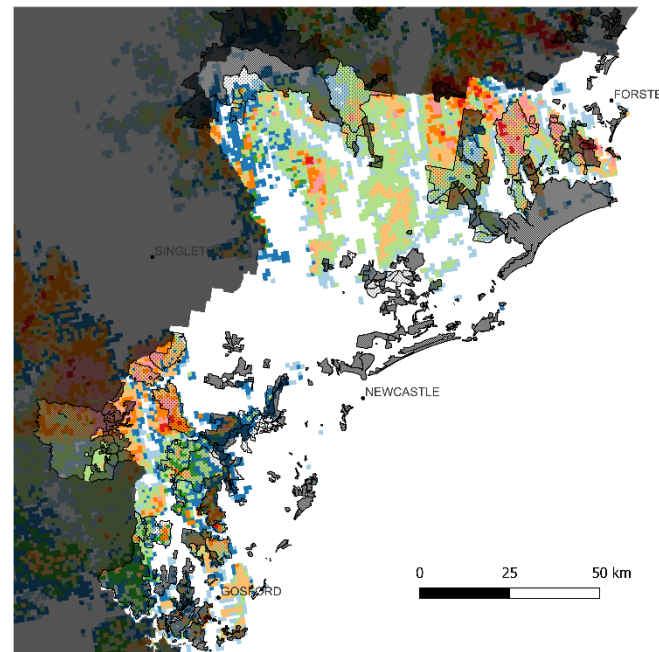
Spotted-tailed Quoll

Parma Wallaby



- State Forest all
- NPWS_all
- BTW MAIN TOWNS
- AUS_adm2
- Parma Wallaby 2070
 - 3
 - 4
- Parma Wallaby 2050
 - 3
 - 4
- Parma Wallaby 2030
 - 3
 - 4
- Parma Wallaby 2020
 - 3
 - 4

0 25 50 km



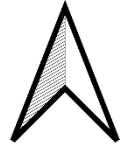
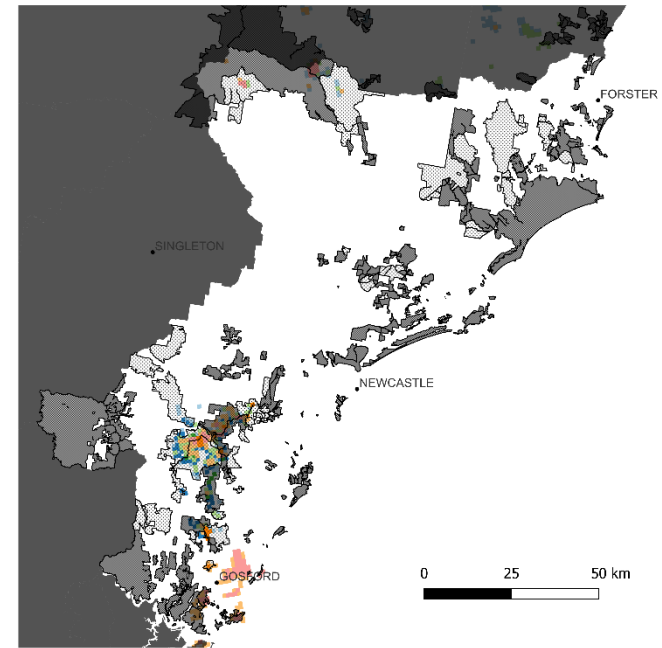
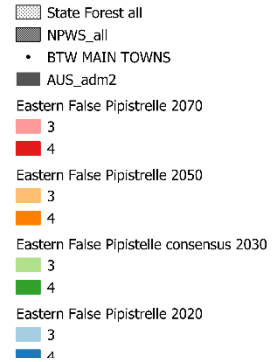
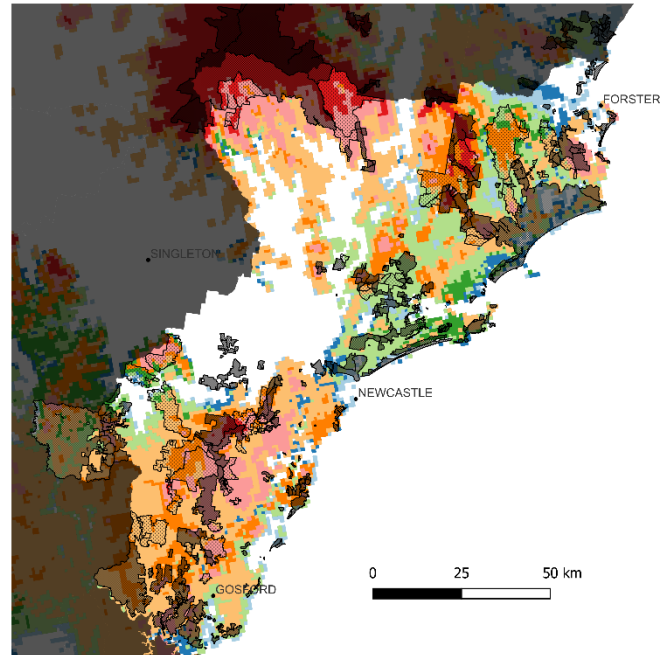
- State Forest all
- NPWS_all
- BTW MAIN TOWNS
- AUS_adm2
- Yellow-bellied Glider 2070
 - 3
 - 4
- Yellow-bellied Glider 2050
 - 3
 - 4
- Yellow-bellied Glider 2030
 - 3
 - 4
- Yellow-bellied Glider 2020
 - 3
 - 4

0 25 50 km

Yellow-bellied Glider

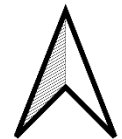
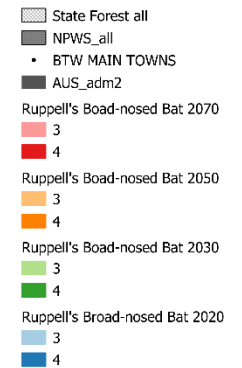
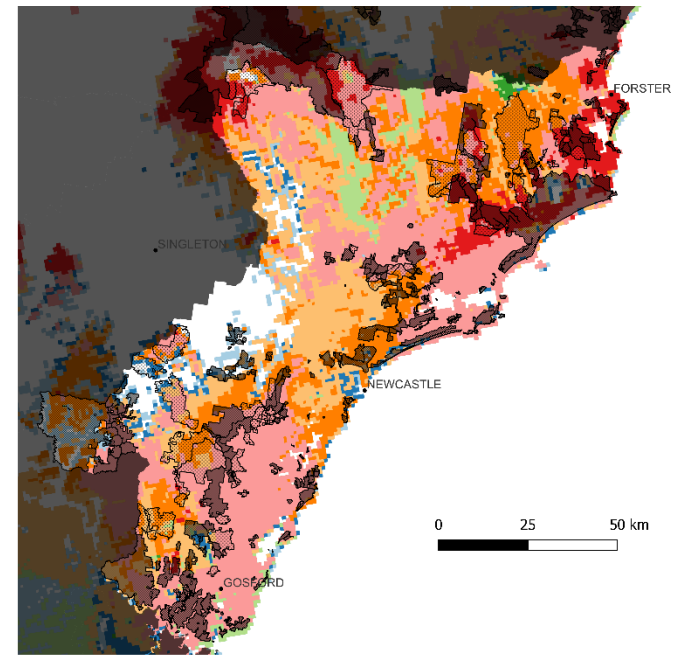
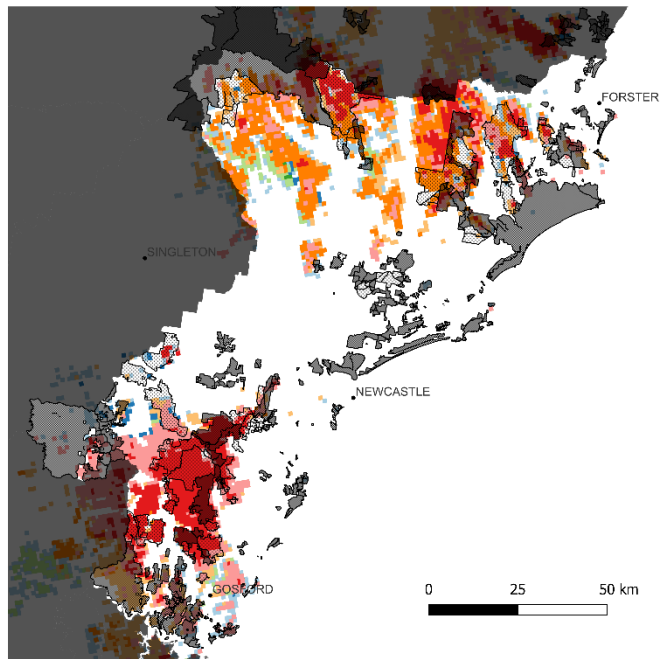
Mammal habitat 2070

Eastern False Pipistrelle



Red-legged Pademelon

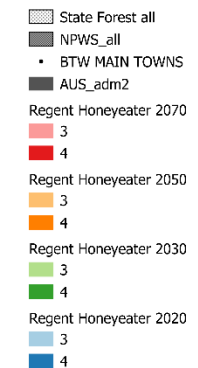
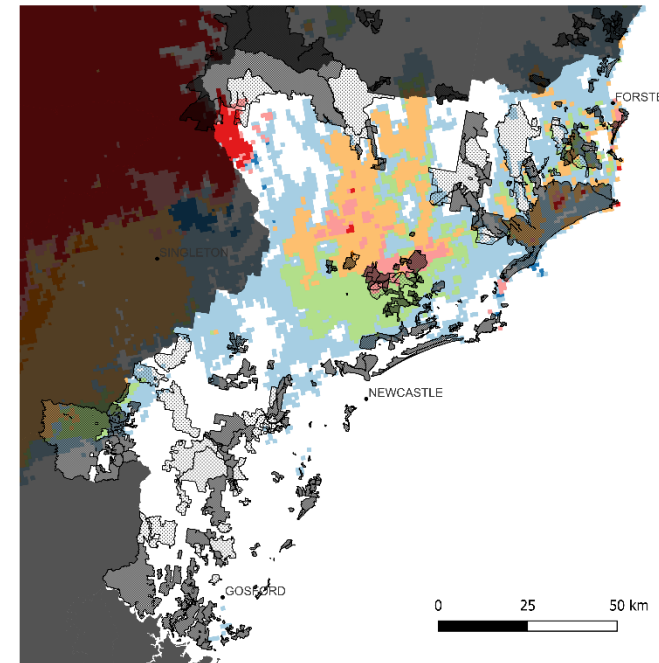
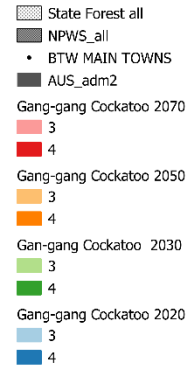
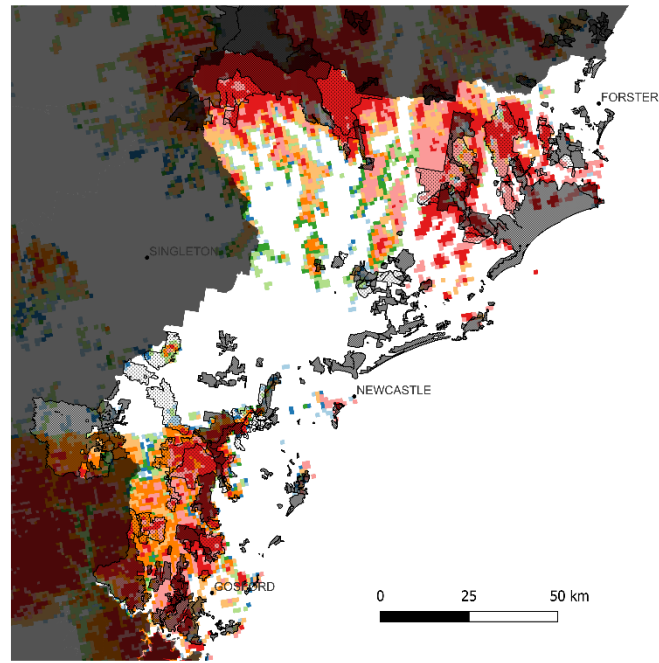
Golden-tipped Bat



Greater Broad-nosed Bat

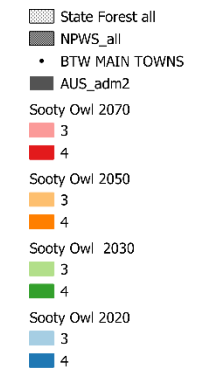
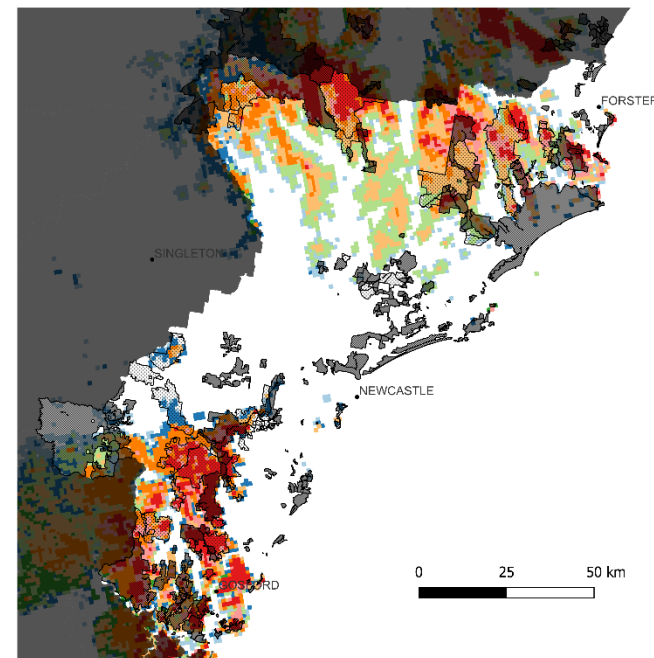
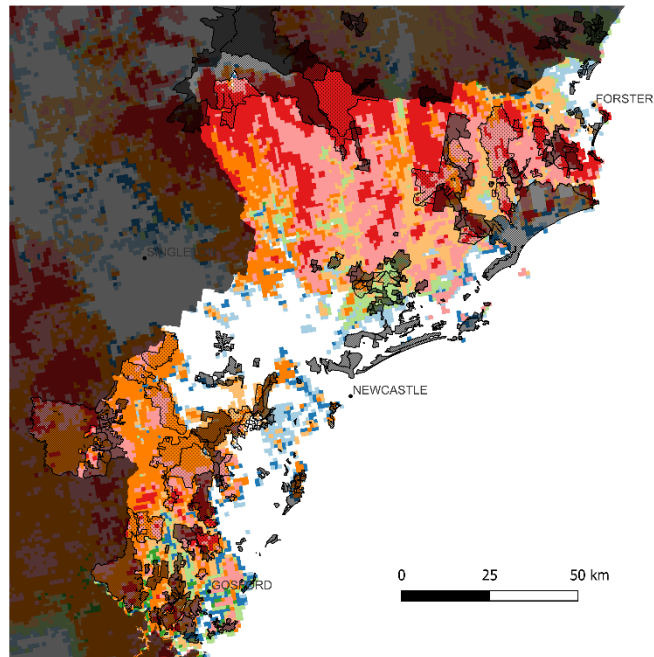
Bird Habitat 2070

Gang-gang Cockatoo



Regent Honeyeater

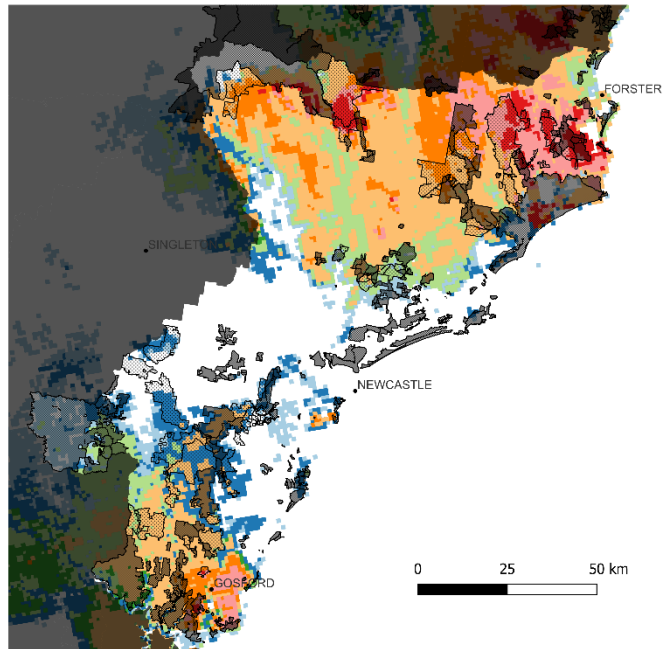
Glossy Black Cockatoo



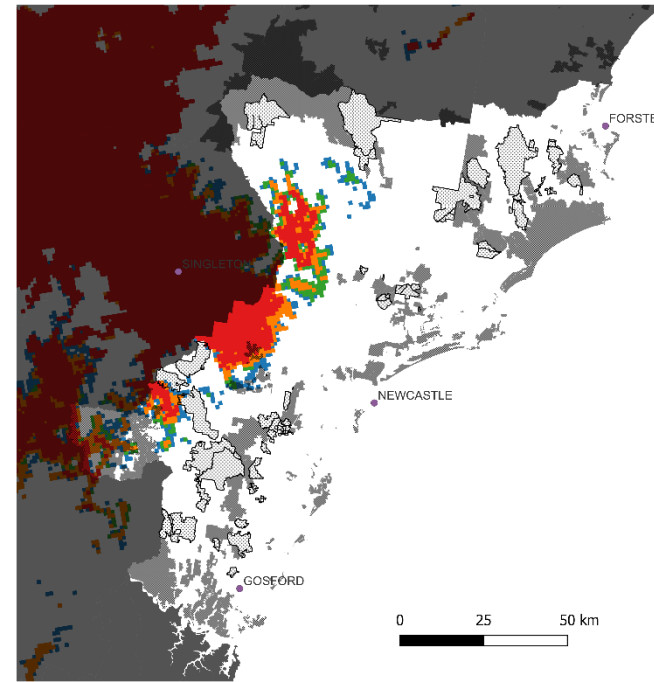
Sooty Owl

Bird Habitat 2070

Masked Owl



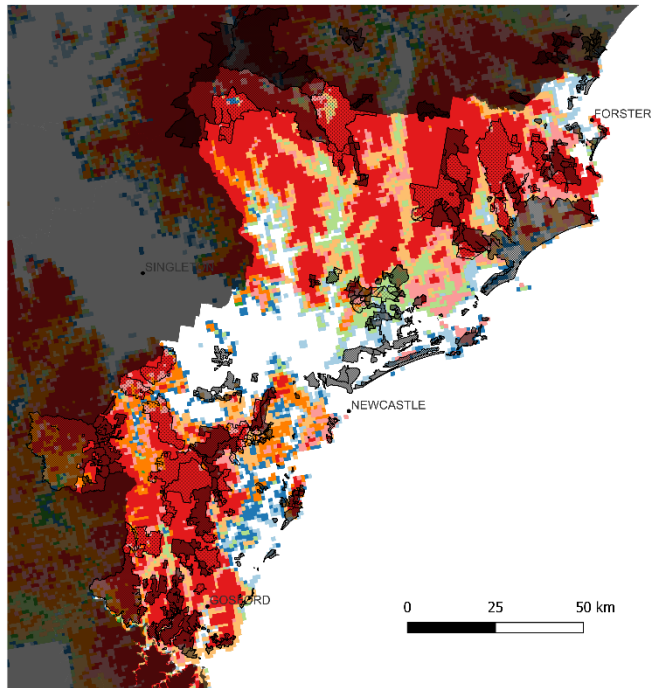
- State Forest all
- NPWS_all
- BTW MAIN TOWNS
- AUS_adm2
- Masked Owl 2070
 - 3
 - 4
- Masked Owl 2050
 - 3
 - 4
- Masked Owl 2030
 - 3
 - 4
- Masked Owl 2020
 - 3
 - 4



Speckled Warbler

- NPWS_all
- State Forest all
- main towns
- AUS_adm2
- Speckled Warbler 2070
 - 4
- Speckled Warbler 2050
 - 4
- Speckled warbler consensus 2030
 - 4
- Speckled Warbler 2020
 - 4

Powerful Owl

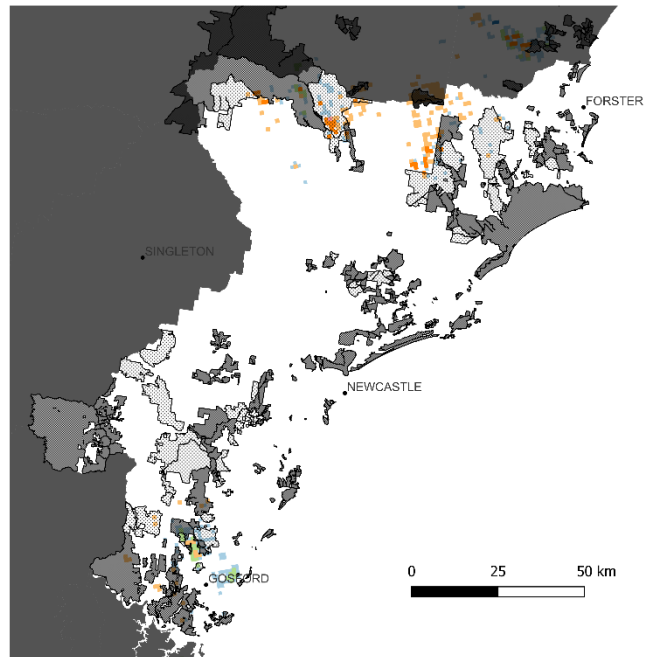


- State Forest all
- NPWS_all
- BTW MAIN TOWNS
- AUS_adm2
- Powerful Owl 2070
 - 3
 - 4
- Powerful Owl 2050
 - 3
 - 4
- Powerful Owl 2030
 - 3
 - 4
- Powerful Owl 2020
 - 3
 - 4

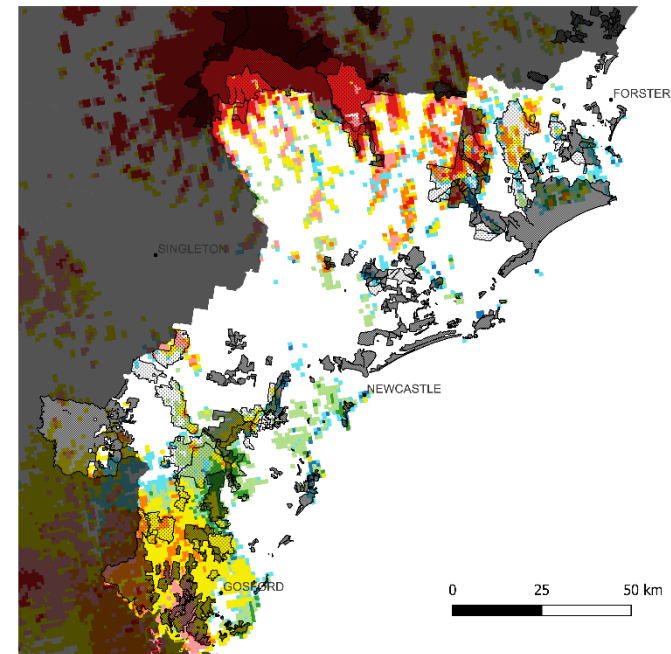


Frog Habitat 2070

Giant Barred Frog



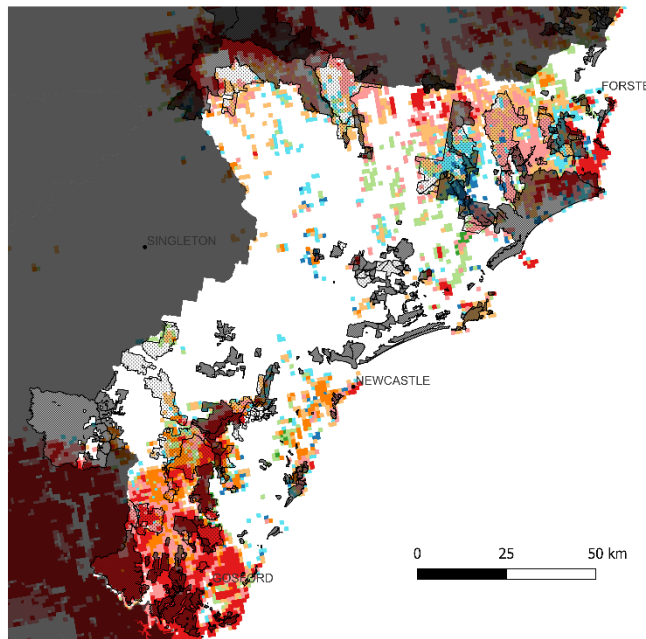
- State Forest all
- NPWS_all
- BTW MAIN TOWNS
- AUS_adm2
- Giant Barred Frog 2070
 - 3
 - 4
- Giant Barred Frog 2050
 - 3
 - 4
- Giant Barred Frog 2030
 - 3
 - 4
- Giant Barred Frog 2020
 - 3
 - 4



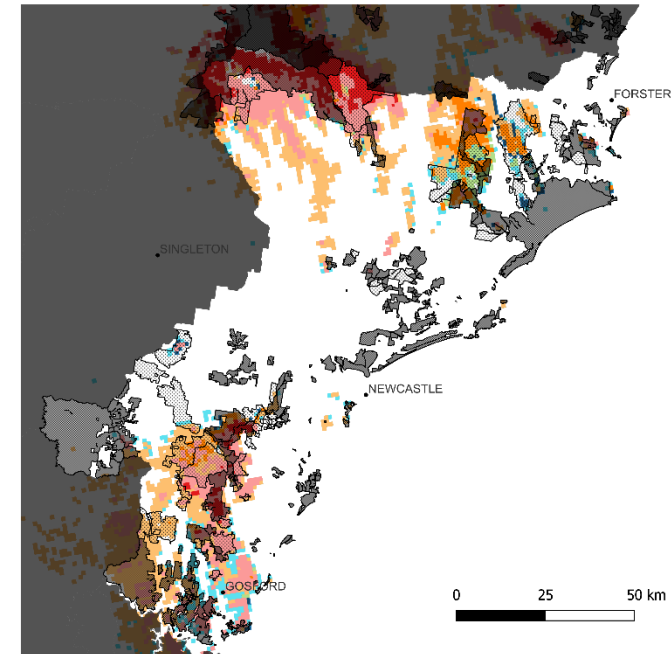
- State Forest all
- NPWS_all
- BTW MAIN TOWNS
- AUS_adm2
- Red-crowned Toadlet 2070
 - 3
 - 4
- Red-crowned Toadlet 2050
 - 3
 - 4
- Red-crowned Toadlet 2030
 - 3
 - 4
- Red-crowned Toadlet 2020
 - 3
 - 4

Red-crowned Toadlet

Giant Burrowing Frog



- State Forest all
- NPWS_all
- BTW MAIN TOWNS
- AUS_adm2
- Giant Burrowing Frog 2070
 - 3
 - 4
- Giant Burrowing Frog 2050
 - 3
 - 4
- Giant Burrowing Frog 2030
 - 3
 - 4
- Giant Burrowing Frog 2020
 - 3
 - 4



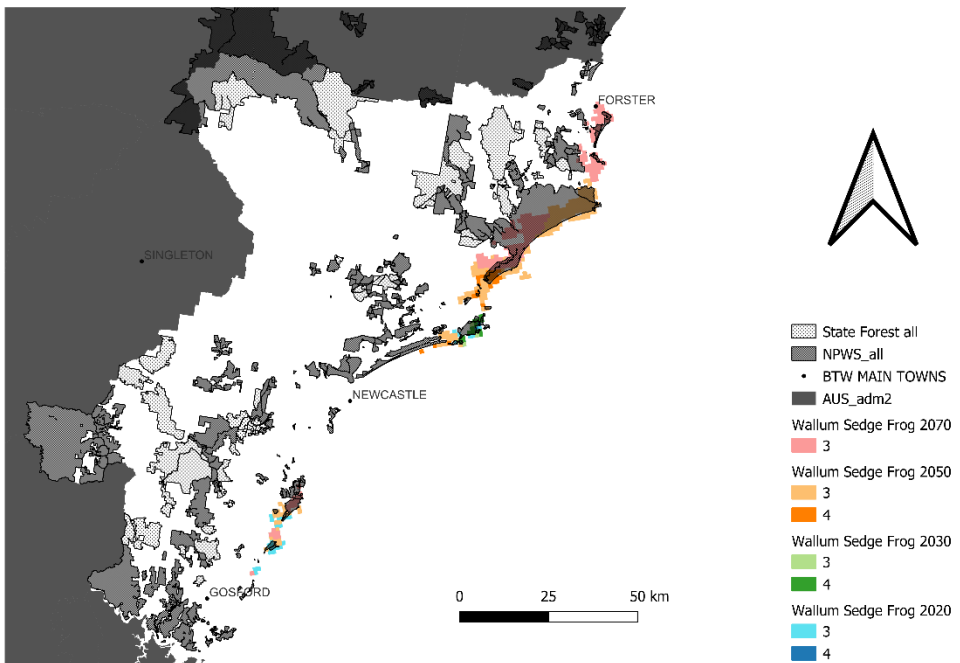
- State Forest all
- NPWS_all
- BTW MAIN TOWNS
- AUS_adm2
- Stuttering Frog 2070
 - 3
 - 4
- Stuttering Frog 2050
 - 3
 - 4
- Stuttering Frog 2030
 - 3
 - 4
- Stuttering Frog 2020
 - 3
 - 4

Stuttering Frog



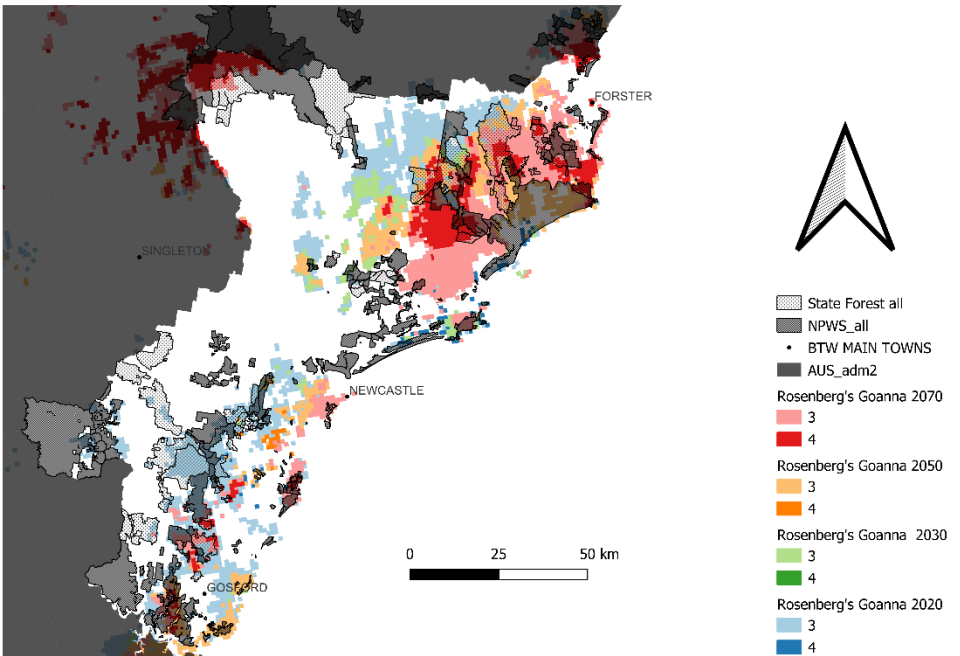
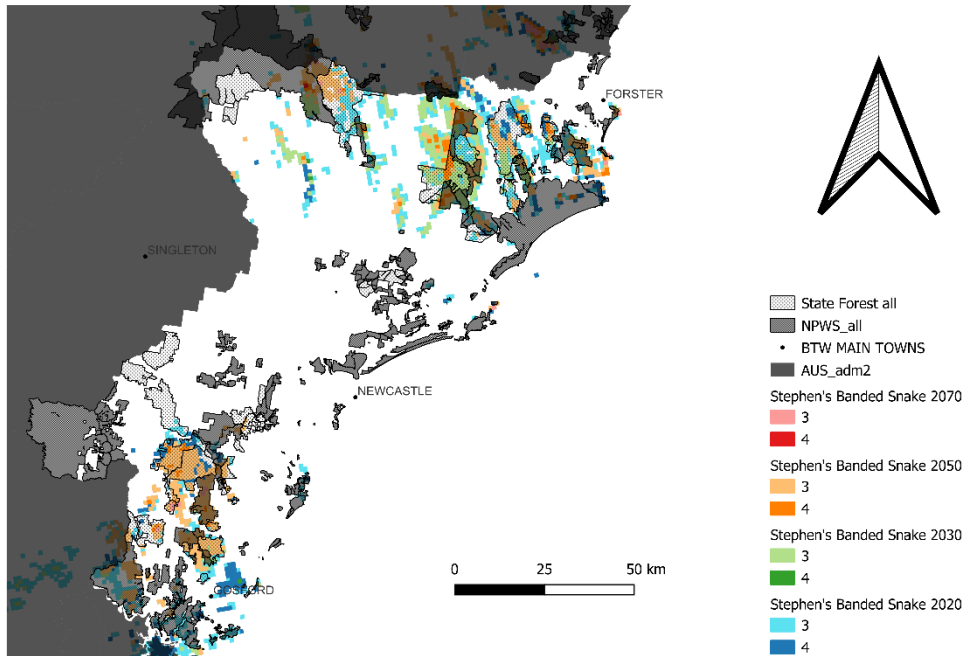
Frog Habitat 2070 cont.

Wallum Sedge Frog



Reptile Habitat 2070

Stephen's Banded Snake



Rosenberg's Goanna

BtH Climate refugia

Overlapping suitable habitat for ten fauna species predicted to suffer range contractions in the region to 2070.

5 mammals

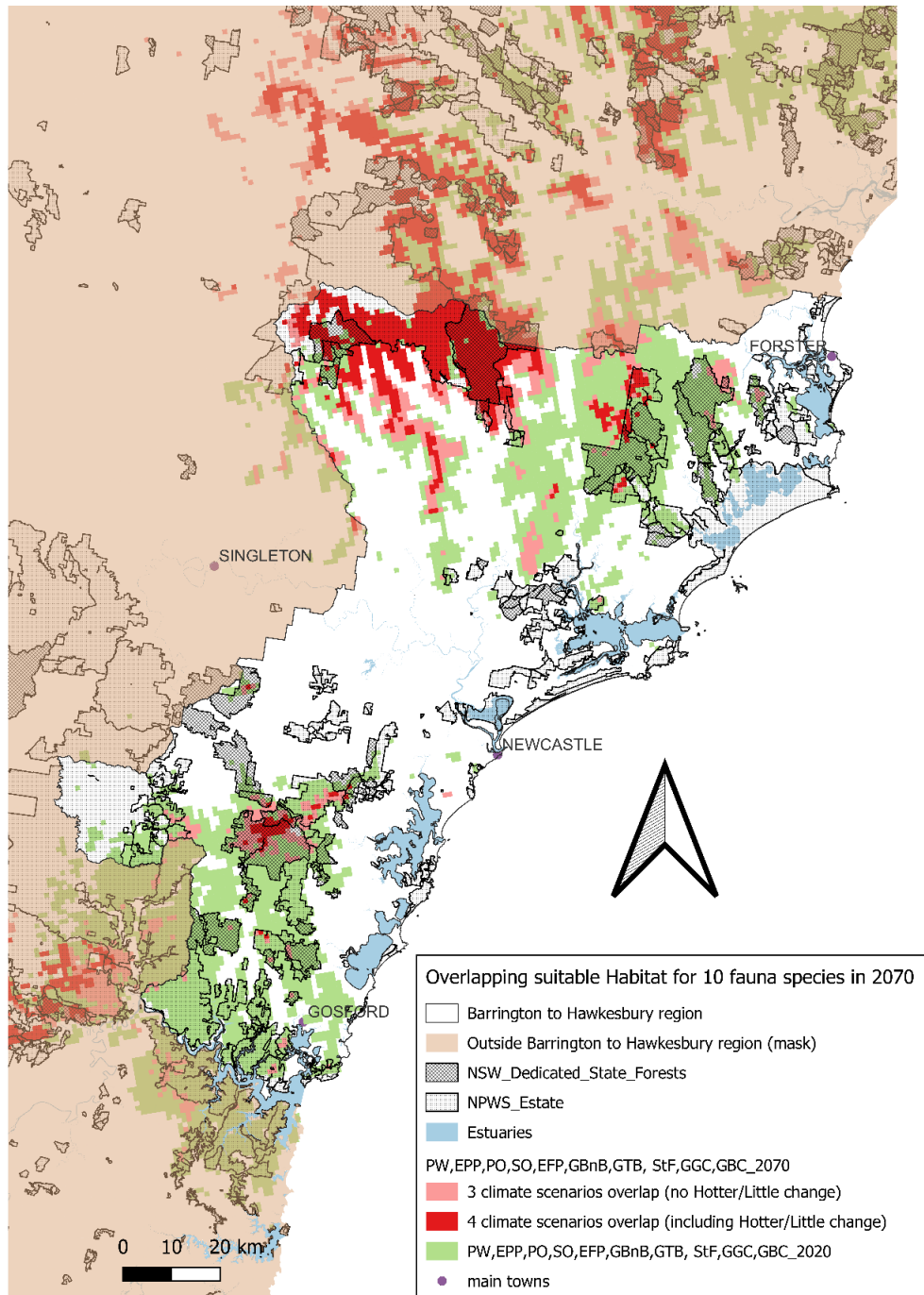
- Parma Wallaby
- Eastern Pygmy Possum
- Eastern False Pipistrelle
- Golden-tipped Bat
- Greater Broad-nosed Bat

4 birds

- Powerful Owl
- Sooty Owl
- Gang-gang Cockatoo
- Glossy Black Cockatoo

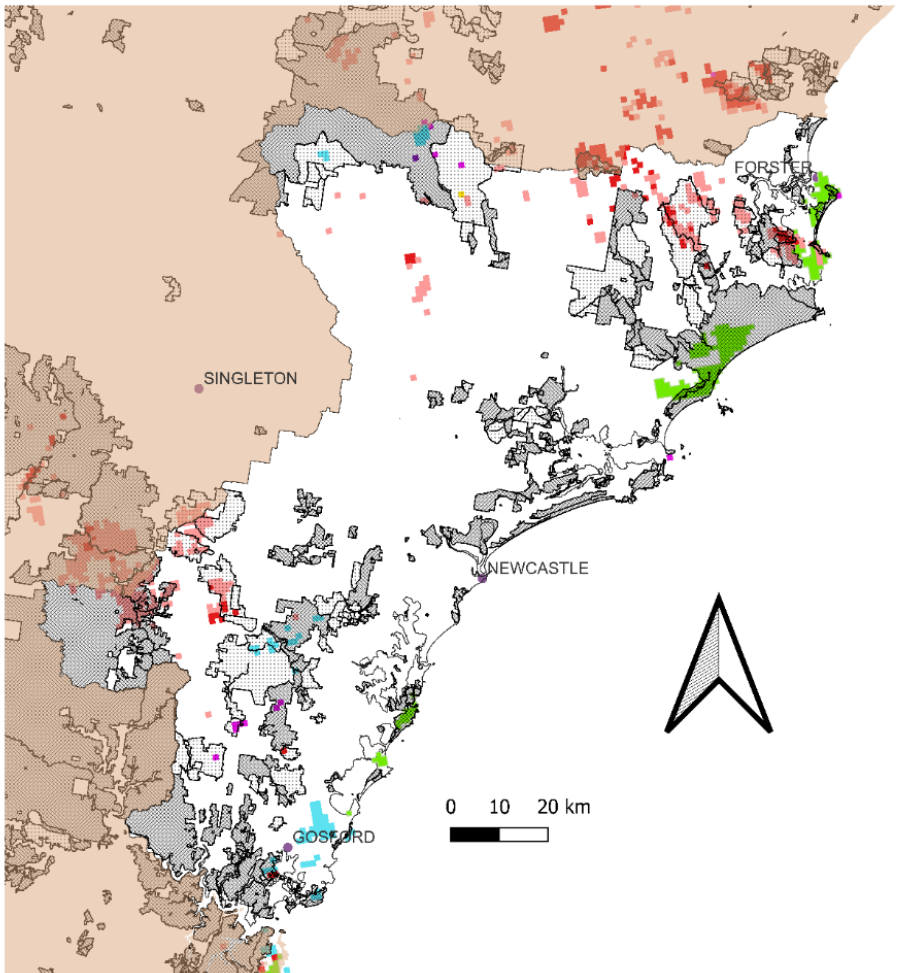
1 amphibian

- Stuttering Frog



Regional Extinctions?

The worst case climate scenario (4.Hotter/Little change), six fauna species (13%) are predicted to have little or no suitable habitat in 2070.

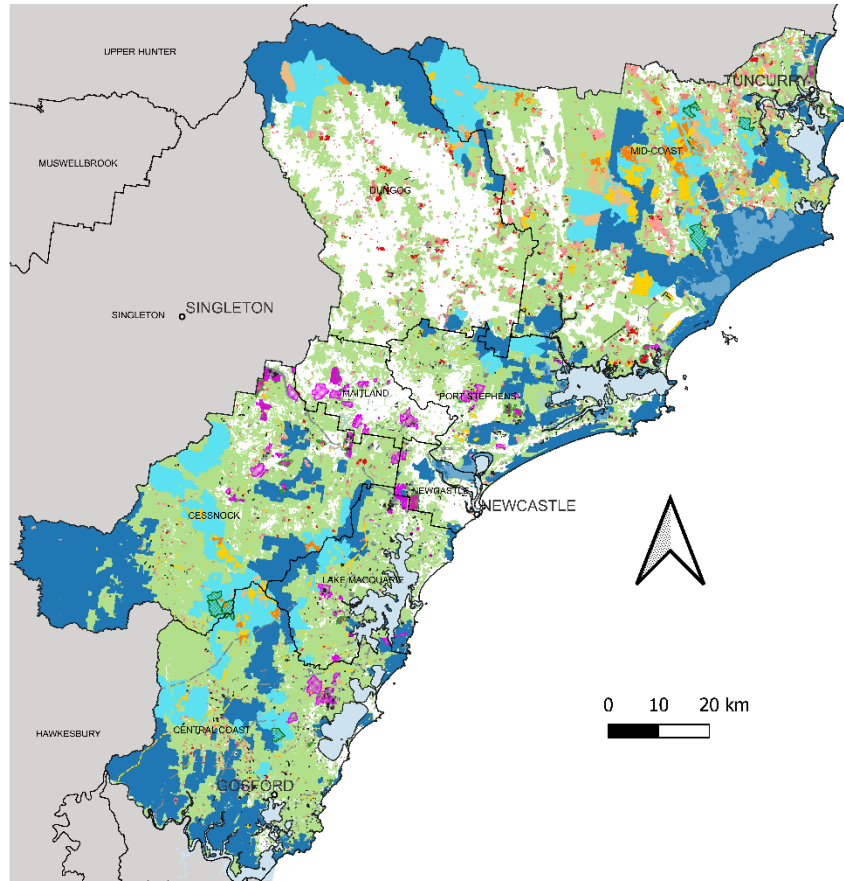


Fauna species with little or no suitable habitat in 2070

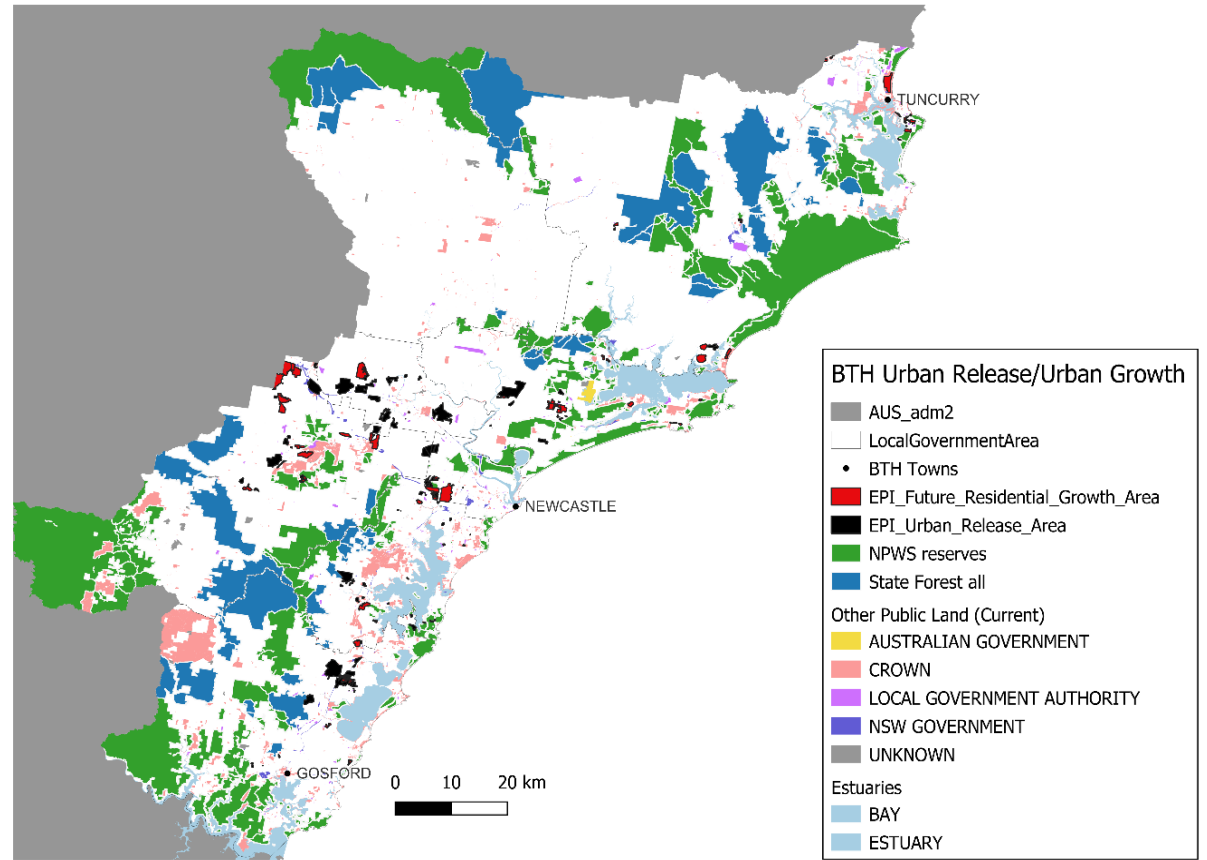


- Red-legged Pademelon
- Yellow-bellied Glider
- Stephens Banded Snake
- Wallum Sedge Frog, and
- Giant Barred Frog
- Red-crowned Toadlet (Impossible to migrate to suitable habitat across the Hunter Valley)

Regional Bushland Loss



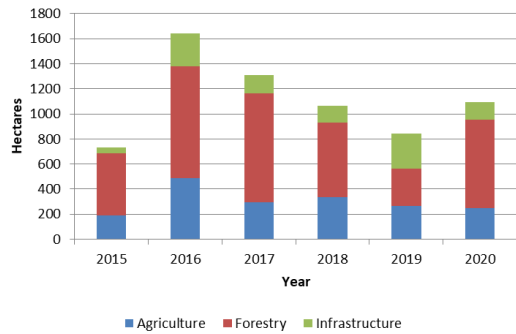
SLATS mapping for 2008 to 2017 identifies 6,540 ha of bushland lost due to agriculture, forestry, and development. The average annual bushland loss was 654 ha



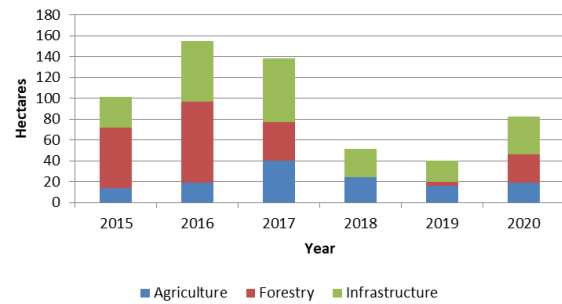
The last ten years have seen over 7,000 ha of the region's native bushland earmarked for "greenfield" urban development

Regional bushland loss 2015-2020

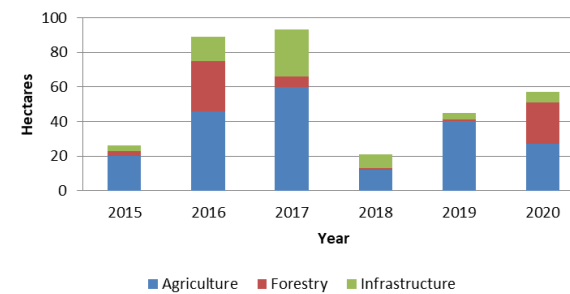
Mid-Coast bushland loss 2015-2020



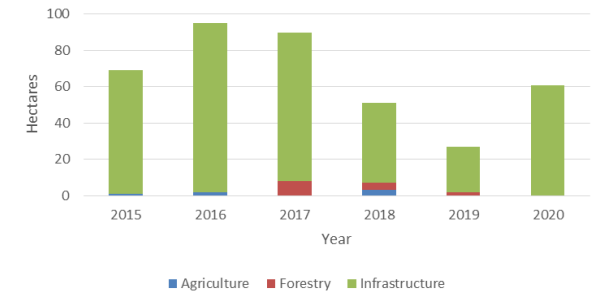
Cessnock bushland loss 2015-2020



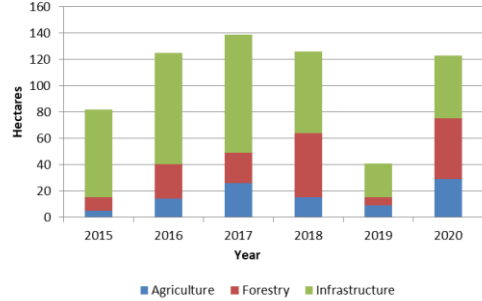
Dungog bushland loss 2015-2020



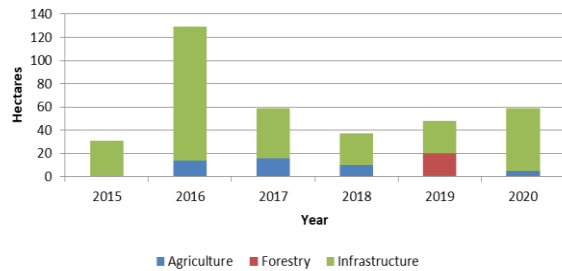
Lake Macquarie bushland loss 2015-2020



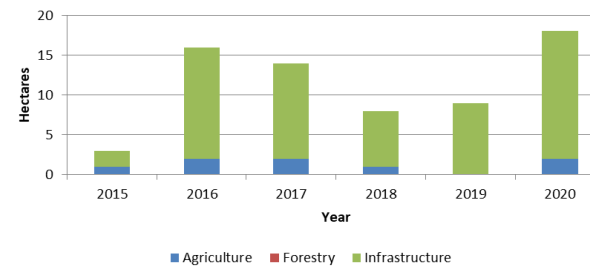
Central Coast bushland loss 2015-2020



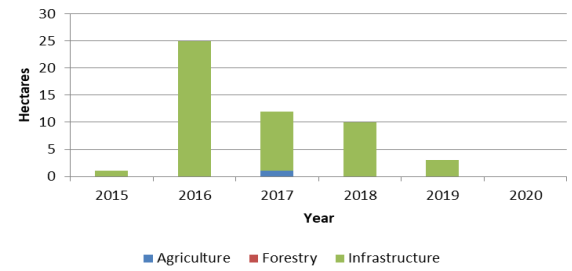
Port Stephens bushland loss 2015-2020

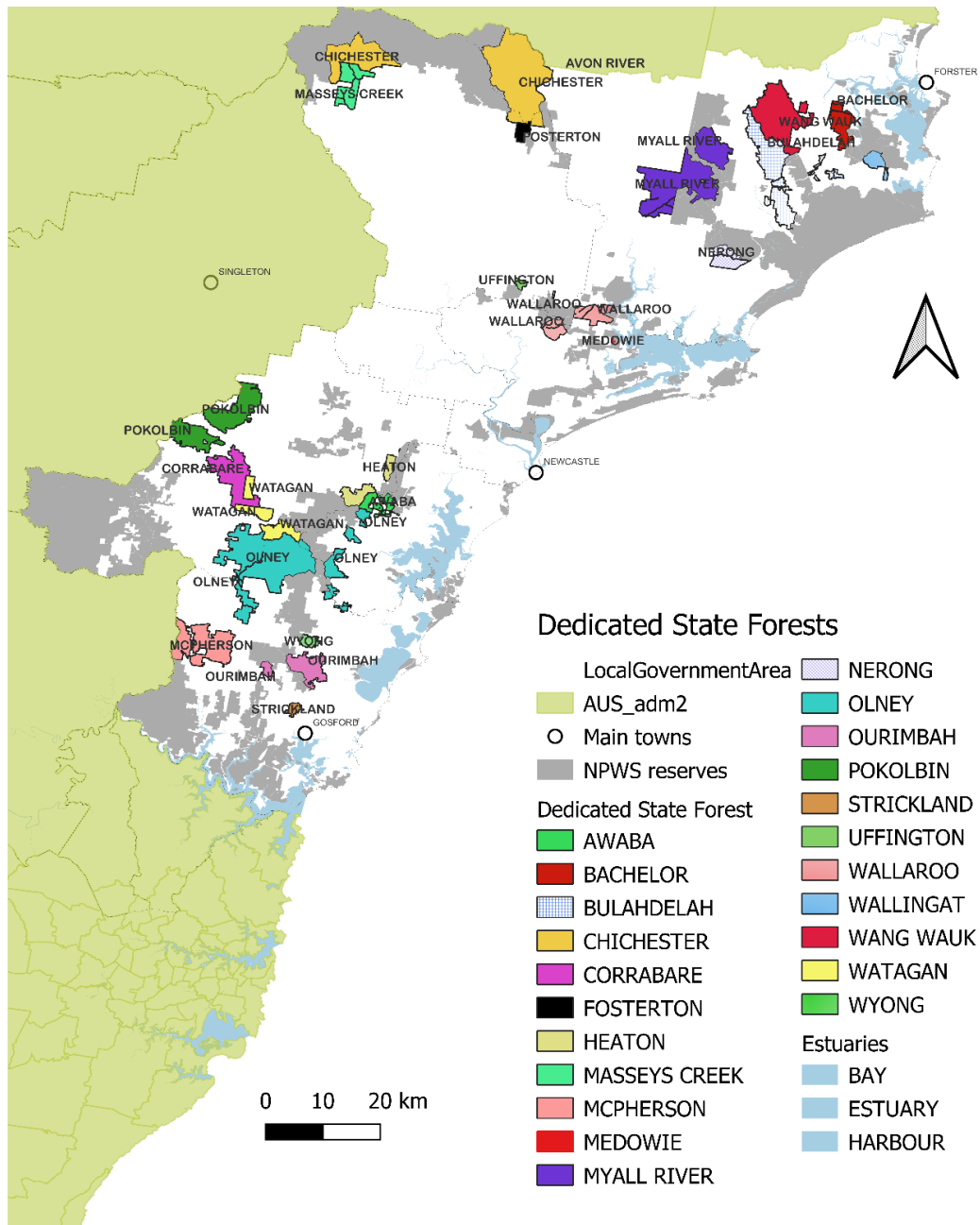


Maitland bushland loss 2015-2020



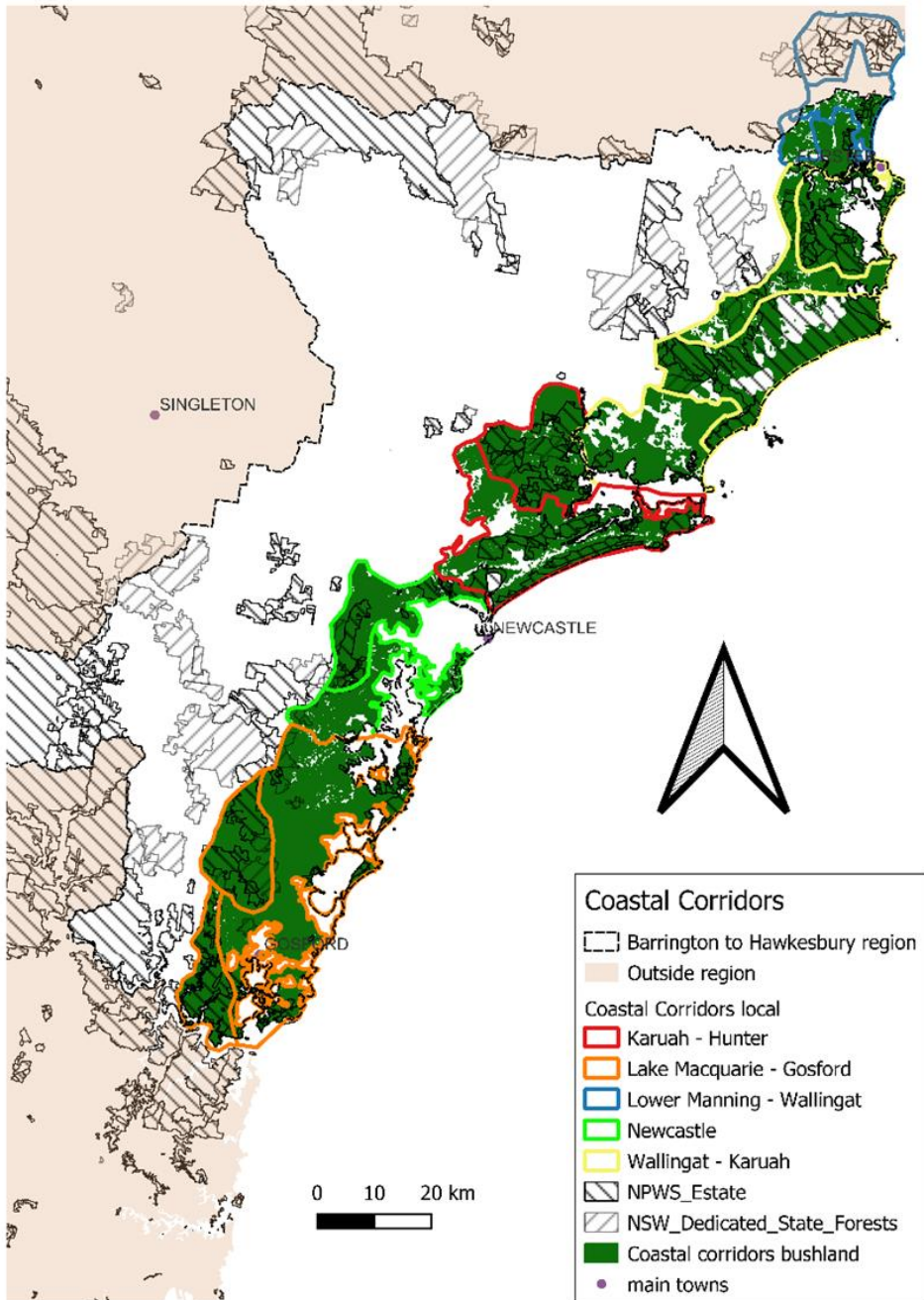
Newcastle bushland loss 2015-2020





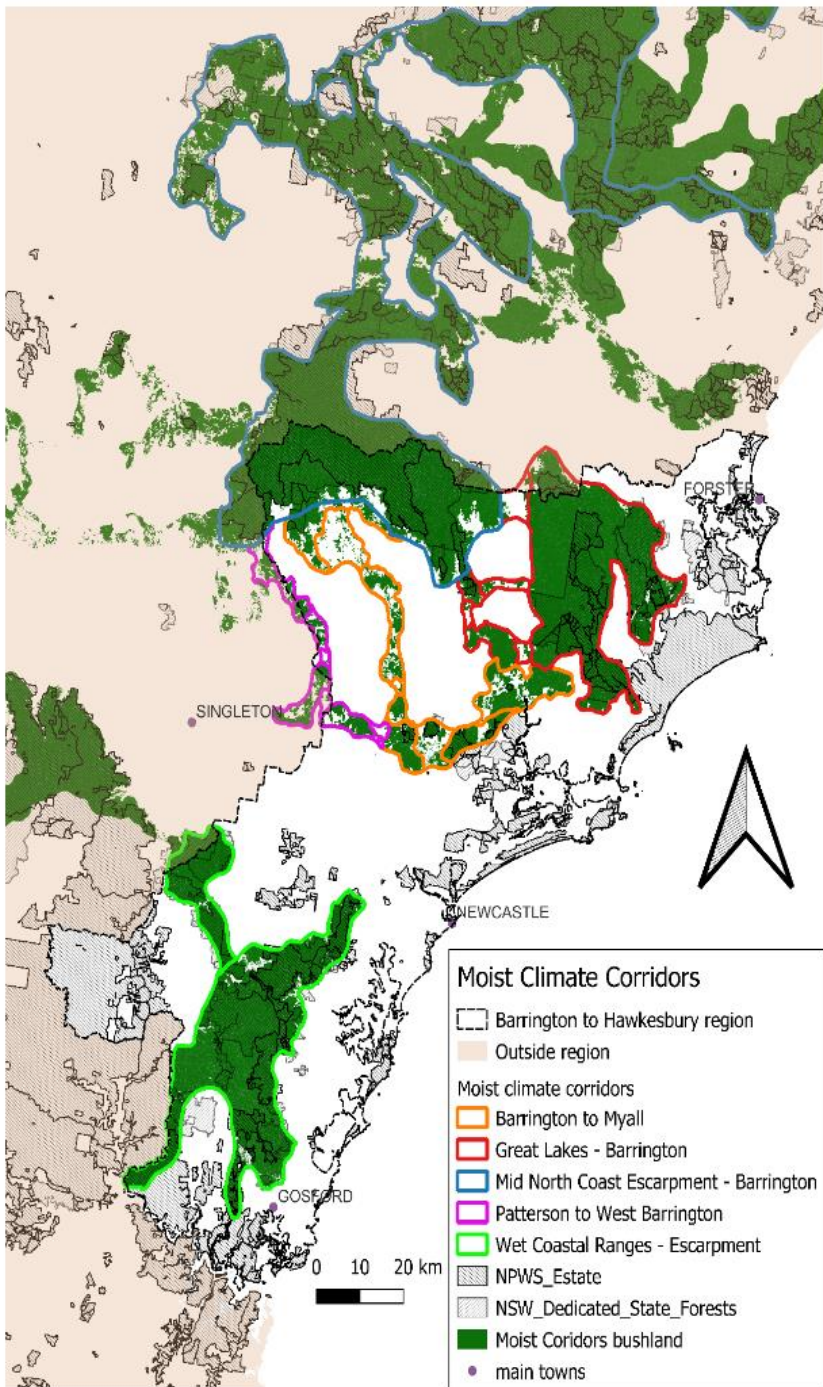
State Forest Name	Area (ha)
ABERDARE	6
AVON RIVER	641
AWABA	1,784
BACHELOR	2,636
BULAHDELAH	8,476
CHICHESTER	21,415
CORRABARE	5,210
FOSTERTON	852
HEATON	2,424
MASSEYS CREEK	3,241
MCPHERSON	6,498
MEDOWIE	50
MYALL RIVER	13,726
NERONG	2,177
OLNEY	18,772
OURIMBAH	7,158
POKOLBIN	8,462
STRICKLAND	484
UFFINGTON	330
WALLAROO	3,612
WALLINGAT	1,243
WANG WAUK	8,370
WATAGAN	3,890
WYONG	728
TOTAL	122,184

Coastal Climate Corridors



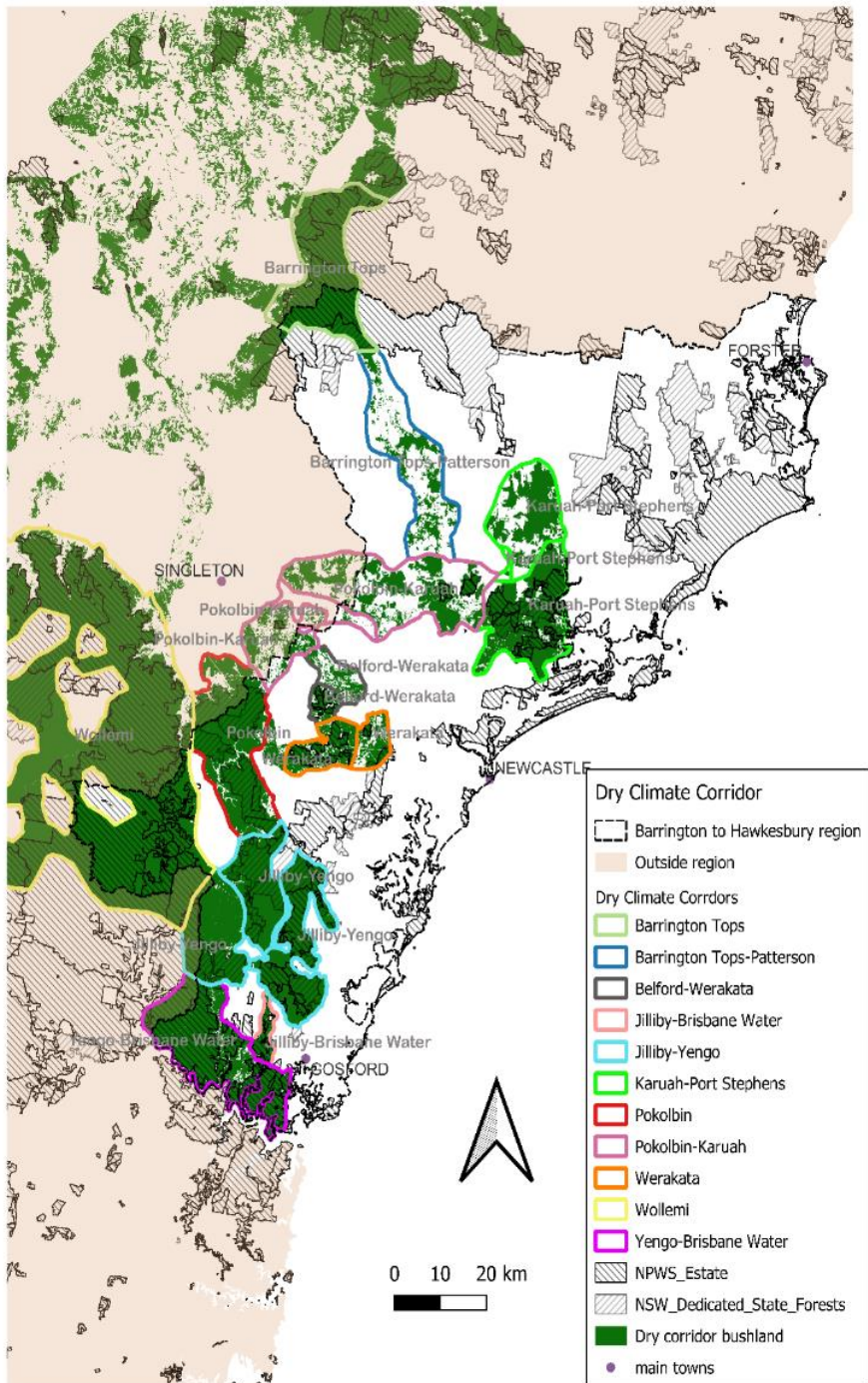
Corridor name	Feature	Referenc e sp. 1	Referenc e sp.2	HCV	Key habitats (ha)	Vegetation (ha)	Area (ha)
Karuah - Hunter	Reserve buffer	Koala	Green and Golden Bell Frog	high	16,017	23,993	28,643
Wallingat - Karuah	Linkage across Floodplain	Koala	Green and Golden Bell Frog	high	12,042	21,409	35,282
Wallingat - Karuah	Linkage across Floodplain	Koala	Grey-headed Flying Fox	high	5,871	15,330	22,172
Wallingat - Karuah	Reserve buffer	Koala	Eastern Chestnut Mouse	high	23,882	43,405	47,762
Newcastle	Protect and enhance	Squirrel Glider	Grey-headed Flying Fox		6,270	15,101	22,347
Newcastle	Linkage across Floodplain	Squirrel Glider	Grey-headed Flying Fox		4,858	12,578	19,692
Lake Macquarie - Gosford	Reserve buffer	Koala		high	14,191	16,523	19,776
Lake Macquarie - Gosford	Reserve buffer	Squirrel Glider	Koala	high	8,830	11,700	15,008
Karuah - Hunter	Linkage across Floodplain	Koala	Squirrel Glider	high	14,681	36,225	55,668
Wallingat - Karuah	Reserve buffer	Koala	Grey-headed Flying Fox	high	9,471	20,876	27,138
Lake Macquarie - Gosford	Valley floor linkage	Squirrel Glider	Wallum Froglet	high	17,483	44,021	84,658
TOTALS					133,596	261,161	378,147

Moist Climate Corridors

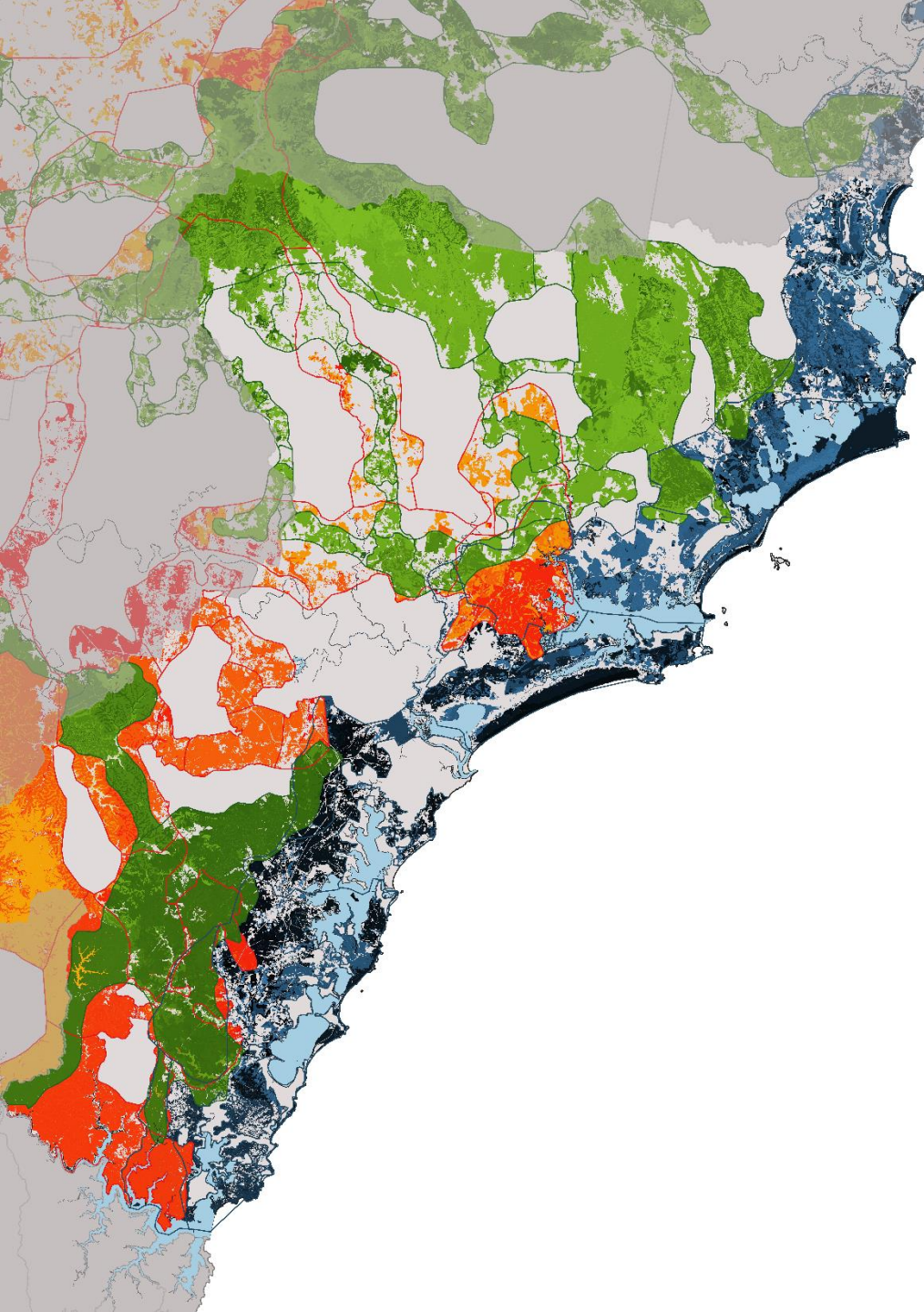


Corridor name	Reference sp.1	Reference sp.2	Voluntary Conservation Agreement	HCV	Key habitat (ha)	Vegetation (ha)	Rainforest (ha)	Old growth (ha)	Corridor area (ha)
Barrington to Myall	Grey-headed Flying Fox	Sooty Owl	priority		7,772	36,040	3,091	3,649	64,321
Great Lakes - Barrington	Stuttering Frog	Sooty Owl	priority	high	54,923	121,080	6,398	18,619	116,288
Mid North Coast Escarpment - Barrington	Giant Barred Frog	Sooty Owl	priority	high	330,593	737,888	196,903	235,111	817,410
Patterson to West Barrington	Koala	Grey-headed Flying Fox			365	12,390	1,130	1,802	21,916
Wet Coastal Ranges - Escarpment	Yellow-bellied Glider	Sooty Owl	priority	high	75,918	105,584	673	-	121,775
TOTALS					469,571	1,012,982	208,195	259,181	1,141,711

Dry Climate Corridors



Corridor name	Feature	Reference sp. 1	Reference sp. 2	HCV	Vegetation (ha)	Key habitats (ha)	Old growth (ha)	Corridor area (ha)
Barrington Tops	Reserve Buffer	Broad-toothed Rat		HCV	39,898	30,110	9,017	41,677
Barrington Tops-Patterson	Stepping Stone Remnants	Squirrel Glider	Grey-headed Flying-fox		10,296	893	443	36,758
Belford-Werakata	Valley Floor Linkages	Woodland Birds	Squirrel Glider		2,709	662	-	7,395
Belford-Werakata	Reserve Buffer	Woodland Birds	Squirrel Glider		3,024	2,678	-	4,172
Jilliby-Brisbane Water	Reserve Buffers and Linkages	Red-crowned Toadlet		HCV	3,871	2,823	-	4,272
Jilliby-Yengo	Protect and Enhance Existing	Koala	Giant Burrowing Frog	HCV	23,098	14,247	-	24,604
Jilliby-Yengo	Reserve Buffers and Linkages	Koala	Giant Burrowing Frog	HCV	26,786	22,406	-	29,847
Jilliby-Yengo	Valley Floor Linkages	Koala	Giant Burrowing Frog	HCV	18,160	15,682	-	20,383
Karuah-Port Stephens	Reserve Buffers and Linkages	Coastal Emu	Koala	HCV	27,194	17,684	2,915	34,190
Karuah-Port Stephens	Valley Floor Linkages	Coastal Emu	Koala	HCV	14,109	886	1,254	25,394
Karuah-Port Stephens	Linkage across Floodplain	Coastal Emu	Koala	HCV	167	11	10	1,110
Pokolbin	Valley Floor Linkages	Woodland Birds	Brush-tailed Rock Wallaby	HCV	38,382	16,479	-	44,883
Pokolbin-Karuah	Valley Floor Linkages	Woodland Birds	Brush-tailed Phascogale		21,750	4,755	3,164	49,571
Pokolbin-Karuah	Linkage across Floodplain	Woodland Birds	Brush-tailed Phascogale		269	3	-	7,417
Pokolbin-Karuah	Valley Floor Linkages	Woodland Birds	Brush-tailed Phascogale		6,430	2,707	-	18,234
Werakata	Reserve Buffers and Linkages	Woodland Birds	Swift Parrot	HCV	9,490	6,315	-	11,529
Werakata	Valley Floor Linkages	Woodland Birds	Swift Parrot	HCV	4,239	1,690	-	7,018
Yengo-Brisbane Water	Reserve Buffers and Linkages	Red-crowned Toadlet		HCV	40,730	24,595	-	44,334
Totals					229,444	129,316	16,803	324,255



Barrington to Hawkesbury Climate Corridors

- Climate Corridors in the region total 810,000 ha.
- Vital linkages across the Hunter Valley but outside the region are recommended for protection. Moist West Coastal Ranges to Escarpment and Paterson to West Barrington Climate Corridors, and the Dry Pokolbin and Pokolbin to Karuah Climate Corridors.
- Restoring native vegetation, installing overpasses and underpasses across highways, removal of aquatic barriers, and rehabilitation of mined areas will all play an essential role in the functionality of these corridors.
- Secure protection for native vegetation within these corridors and protecting it from further degradation must begin now.

Thank you!



BARRINGTON TO HAWKESBURY CLIMATE CORRIDORS ALLIANCE 2022

<https://www.hcec.org.au/climate-corridors>



Hunter Bird Observers Club

