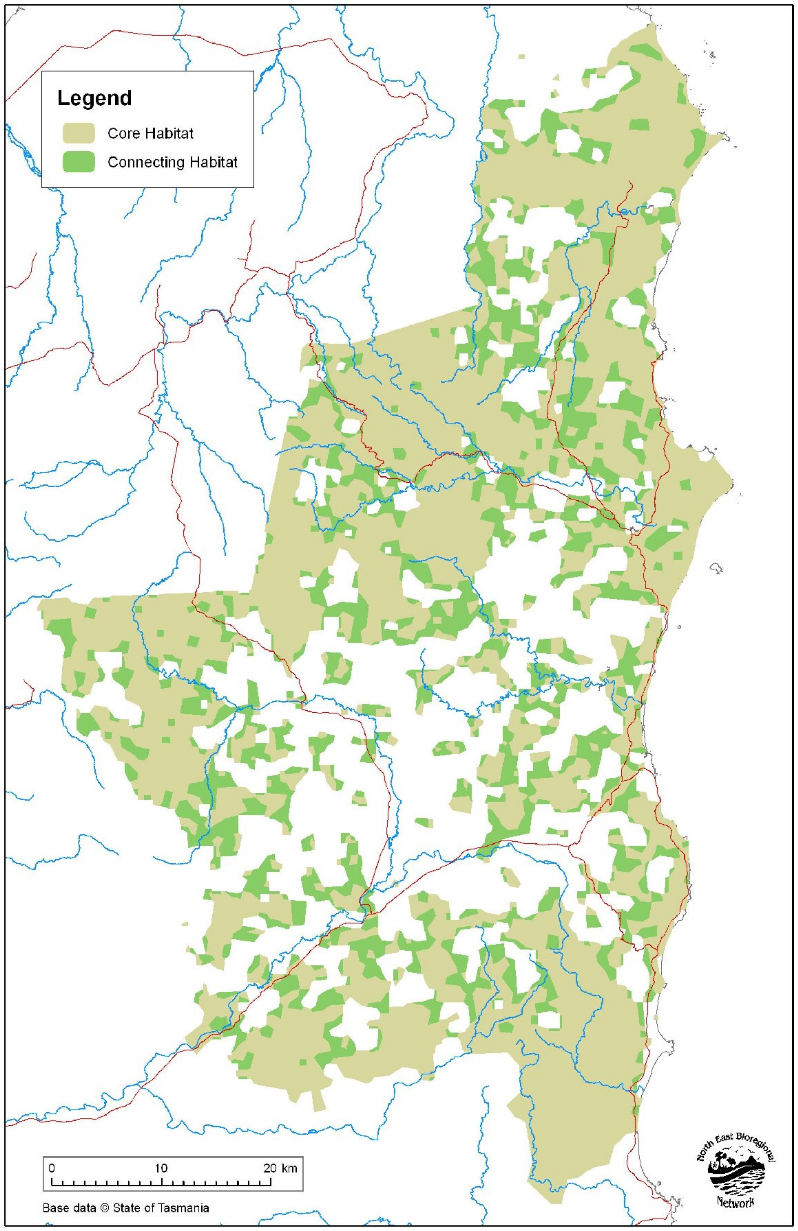


Break O'Day priority habitat mapping project

Report for the North East Bioregional Network and Bay of Fires Coastal Preservation Lobby

By Nick Fitzgerald
BSc (Hons)

October 2011

1 Introduction

Identification and appropriate management of habitat for native plants and animals is important given the ongoing loss and degradation of such habitat. Intact and interconnected habitat provides the best basis for sustaining biodiversity now and in the future.

The Break O'Day Planning Scheme defines *Priority Habitat* as the areas identified on the planning scheme map as Priority Habitat. This report presents a habitat map for the Break O'Day Municipality in an attempt to identify the most important areas of habitat for a wide range of native species.

Habitat is most often defined with regard to individual species. That approach is followed here for those threatened species which have adequately mapped habitat. Because there is insufficient knowledge and data about the vast majority of species it is necessary to use vegetation communities as a surrogate for species habitat. By identifying core areas and connections in the landscape, this habitat will be functional at all levels of biodiversity: genetic, species and ecosystem. In this report *Priority Habitat* is mapped as *Core Habitat* (irreplaceable relatively large patches) and *Connecting Habitat* (smaller patches, linkages, buffer zones and potential restoration areas).

The spatial conservation planning software Marxan (Ball *et al.* 2009) was used to develop the priority habitat layer. The advantages of using Marxan for this project are:

- transparency and repeatability of the process;
- ability to run alternative scenarios or update the analysis with new data;
- and, importantly, an explicit means of incorporating connectivity.

Typical use of Marxan for conservation planning involves setting different reservation targets for various conservation assets (e.g. species) and the software creates scenarios which optimise the efficiency of the proposed reserve system (i.e. meet reservation targets for the least cost). In this study the aim is to identify priority habitat rather than a reserve system and as such all mapped values that constitute important habitat have been included and no costs are used. The resulting layer identifies where concentrations of priority habitat occur (core habitat areas) and areas comprising smaller patches of priority habitat or non-priority habitat which provide connectivity between core habitat areas (habitat corridors). Since habitat does not conform to land tenure boundaries a tenure-blind analysis is presented.

It must be noted that areas not identified as priority habitat will have some habitat value and may have potential for strategic ecological restoration in order to consolidate or connect existing priority habitat. Furthermore there will be areas of priority habitat that are not identified in this process due to lack of available spatial data. Improved habitat mapping and modelling for individual threatened species would make this analysis more accurate and comprehensive.

2 Methodology

Spatial analysis of habitat was conducted for the entire Break O'Day municipality, an area of 3,560 km^2 including several estuaries. A grid of 200 x 200 m square planning units was created and clipped to the extent of the municipality. Planning units on the edge which were clipped to less than the standard grid cell size of 4 hectares are included except where they were less than 10% of the normal grid size. This resulted in 89,782 planning units.

Relevant spatial datasets were identified by the North East Bioregional Network. In some cases existing datasets were modified as detailed in Section 3. This selection of threatened species records, threatened species habitat mapping, vegetation community mapping and important biogeographic areas formed the 'assets'. A total of 253 assets are included however only 85 are 'conservation assets' used to determine priority habitat, the remainder do not contribute to priority habitat in themselves but may coincide with other assets such as threatened species or may be necessary for connectivity between patches of priority habitat.

ArcGIS 9.2 was used to create the planning units grid and to calculate the extent of each conservation asset in each grid cell. The resulting matrix formed the basis for the Marxan analysis. Other Marxan files provide information on the adjacency of grid cells (necessary for determining connectivity), the status of each grid cell (cells more than 60% occupied by estuaries or urban areas were excluded from the analysis), and the target proportions for each asset (Ardron *et al.* 2010).

By increasing the Boundary Length Modifier (BLM) in Marxan the spatial clustering of individual conservation assets is increased, resulting in more coherent and connected areas selected. Marxan generates a range of near-optimal scenarios of spatial configurations which capture the assets. Analysing the frequency with which individual cells are selected in different scenarios gives a robust indication of which areas are essential for capturing the assets and which are less important. Cells which featured in 80% or more of results were classified as *core habitat*, while cells selected in between 40 and 80% of scenarios were classified as *connecting habitat* since these areas clearly have habitat values and provide spatial connectivity.

3 Input Data

3.1 Vegetation

3.1.1 TASVEG

TASVEG is a statewide 1:25,000 scale vegetation map. This was combined with the biogeographic regionalisation for Australia (IBRA 6) to assign all of the vegetation in the study area to a TASVEG community and a bioregion, so that the bioregional status of each native vegetation community could be assessed in addition to the statewide status. This is useful because the conservation significance of a community can vary between regions, e.g. a community which is widespread in one part of Tasmania may occur as rare, outlying or remnant patches in another bioregion. The municipality covers four of Tasmania's nine bioregions. Most of the coastal areas are in the Flinders Bioregion while the highlands are Ben Lomond bioregion. The southernmost part of the municipality is in South East bioregion and the Fingal Valley is at the edge of Northern Midlands bioregion.

3.1.2 Priority Setting

All TASVEG communities listed as rare, vulnerable or endangered on the Tasmanian *Nature Conservation Act 2002* are included as conservation assets. Vegetation communities which are rare in a bioregion, either due to a naturally limited extent or depleted by land clearing, are important for biodiveristy conservation. Any TASVEG community with less than 100 hectares in a bioregion has been classified as bioregionally rare and is priority habitat.

3.1.3 Commonwealth Listed Ecological Communities

Two communities listed on the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* occur in the municipality: 'Lowland native grasslands of Tasmania' and '*Callitris oblonga – Eucalyptus ovata* riparian forest'. Given their rarity and national conservation significance these are considered priority habitat. These communities are presently protected by the EPBC Act regardless of land tenure.

3.2 Conservation of Freshwater Ecosystem Values

CFEV is a comprehensive statewide spatial dataset of freshwater ecosystems. Three CFEV layers are used in this analysis: waterbodies, rivers and saltmarshes. CFEV wetlands were not included since wetlands are already included as priority habitat as TASVEG communities. Each element in the CFEV layers (e.g. a waterbody or river segment) has an Integrated Conservation Value (ICV) score based on a wide variety of features including condition, weeds, fauna habitat. For each CFEV layer the elements with an ICV of High or Very High are used for priority habitat.

3.3 Coastal Values

The Coastal Values of North East Tasmania project mapped biodiversity and geomorphology values along the NE coast (DTAE 2007).

3.3.1 Vegetation condition

Condition of coastal vegetation has been mapped based on disturbance, weeds etc. Given the importance of coastal vegetation as flora and fauna habitat and the widespread loss and degradation of this habitat any areas of intact native coastal vegetation are priority habitat. Coastal vegetation with the highest condition score is relatively rare on the Break O'Day coastline and has been included as a conservation asset.

3.3.2 Potential Fauna Habitat

This mapping is based on vegetation which provides suitable habitat for threatened fauna species combined with observations of threatened fauna in the coastal zone. These areas are all priority habitat.

3.4 Important Bird Areas

Birds Australia have identified Important Bird Areas across Australia. These are included here as priority habitat (Birds Australia 2009).

3.5 Biogeographic Values

The Public Land Use Commission identified parts of Tasmania which have special significance based on assemblages of species such as areas with concentrations of endemic species or with high species richness (PLUC 1996). Examples of seven out of eight of these 'Biogeographic Distinctiveness' layers occur in the Break O'Day Municipality. Given their statewide and national significance for biodiversity these are useful conservation assets to cover a range of biodiversity values that may otherwise not be captured.

The layers included here are:

- Centres of flora species richness
- Centres of fauna species richness
- Centres of primitive fauna
- Flora species distribution limits
- Fauna species distribution limits
- Centres of flora endemism
- Centres of fauna endemism

3.6 Threatened Species

Two types of data were used for threatened species: individual observations of species and habitat mapping based on known occurrences and habitat preferences, which is only available for a relatively small number of threatened species.

3.6.1 Natural Values Atlas Records

Observations of flora species listed on the Tasmanian *Threatened Species Protection Act 1995* and/or the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* were downloaded from the statewide Natural Values Atlas. Records from before 1980 and those with a spatial accuracy of more than 200 metres were removed. The remaining point records were buffered with a 200 m radius circle to create a priority habitat layer.

3.6.2 Potential Habitat

The Forest Practices Authority (FPA) has produced habitat and range mapping for some threatened fauna species (FPA 2008). The dwarf galaxiid was not included in this analysis since it only occurs in wetlands which are already considered priority habitat. For species where only a range map was available this has been used to identify potential habitat. Other projects have created habitat maps for other species.

3.6.2.1 Blind velvet worm

FPA 'suitable habitat' layer.

3.6.2.2 Giant velvet worm

FPA 'suitable habitat' layer.

3.6.2.3 Bornemizzas stag beetle

The FPA range extent map for this species was intersected with TASVEG eucalypt forest types to create a potential habitat layer.

3.6.2.4 Simsons stag beetle

FPA 'suitable habitat' layer.

3.6.2.5 Vanderschoors stag beetle

FPA 'suitable habitat' layer.

3.6.2.6 Giant freshwater crayfish

FPA range boundary was intersected with a riparian layer created by buffering watercourses 20 m either side.

3.6.2.7 Swan galaxias

FPA range boundary was intersected with a riparian layer created by buffering watercourses 20 m either side.

3.6.2.8 New holland mouse

FPA range boundary was intersected with the eleven TASVEG vegetation types identified as constituting new holland mouse habitat by Lazenby (2009): Coastal scrub (SSC), Coastal heathland (SCH), Dry scrub (SDU), Coastal scrub on alkaline sands (SCA), Eucalyptus amygdalina coastal forest and woodland (DAC), E. nitida Furneaux forest (DNF), E. sieberi forest and woodland not on granite (DSO), Heathland on granite (SHG), E. sieberi forest and woodland on granite (DSG), E. viminalis Furneaux forest and woodland (DVF), and Heathland scrub complex at Wingaroo (SCW).

3.6.2.9 Spotted-tail quoll

FPA core range was intersected with preferred habitat types, i.e. TASVEG eucalypt forest, rainforest, blackwood forest and coastal heath (Bryant & Jackson 1999).

3.6.2.10 Masked owl

A bioclimatic model for this species identified potential core range (Bell *et al.* 1996). Within this core range the species utilises a range of habitats including farmland, however dry sclerophyll forest is the preferred habitat and oldgrowth forest is needed for nesting (Bell *et al.* 1996). Intersecting dry eucalypt forest mapping units from TASVEG with the core range map yielded a masked owl core habitat layer which is used here.

3.6.2.11 **Grey goshawk**

FPA 'suitable habitat' layer.

3.6.2.12 **Swift parrot**

Foraging habitat for the swift parrot has been mapped based on TASVEG, other vegetation mapping and ground truthing (DPIPWE 2010). Note that not all areas of potential habitat have been mapped yet. This does not include nesting habitat which is mature forest in the vicinity of foraging habitat.

4 Results

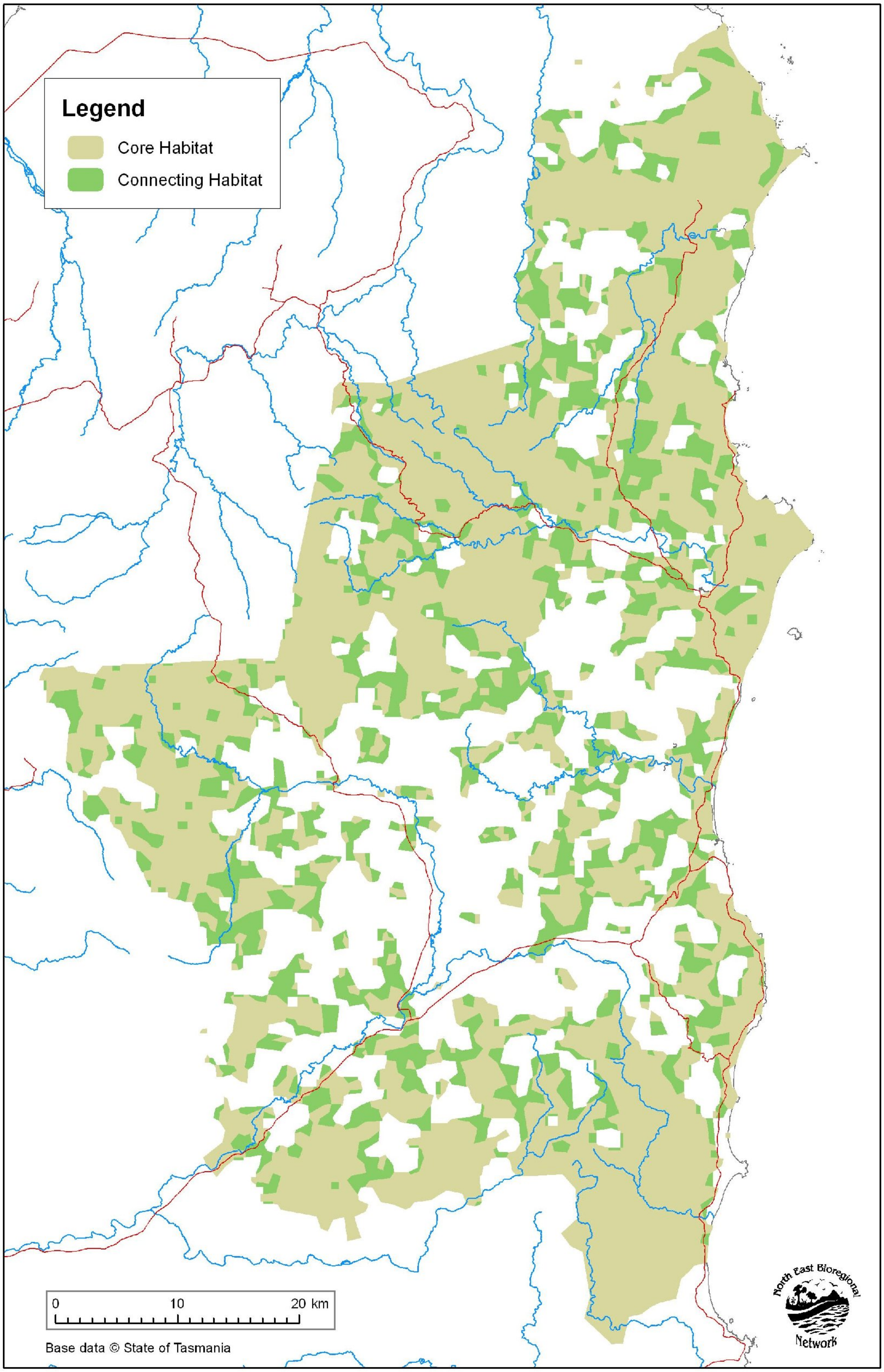
Large areas of priority habitat are mapped as core areas. Connectivity zones are also shown. A large proportion of the municipality is classified as priority habitat. This reflects the considerable biodiversity values in the region. The largest core areas of priority habitat are in existing reserves, e.g. Douglas-Apsley NP, Mount William NP, Blue Tier FR.

Core habitat totals 170,800 hectares, with 62,7000 ha of connecting habitat and the remaining 122,400 ha of non-priority habitat. 83,700 ha of priority habitat is in reserves on public land (formal or informal).

Not all areas of existing reserves will be identified as priority habitat because:

a) reserve design may necessitate including areas less important for biodiversity in order to make a functional sensible reserve,
b) reserve boundaries may take into account factors other than habitat (e.g. catchments, scenic values),
c) vegetation communities which are not designated as priority habitat in this analysis because they are considered adequately reserved rely on the existing reserve system for this status.

In some cases priority habitat includes areas of non-natural vegetation that contribute to connectivity and may be priority areas for ecological restoration. To this end it would be useful if the Break O'Day Council included a classification of Restoration Zones in the Biodiversity Code of the planning scheme. It should be noted that many species, including threatened species such as the Tasmanian devil and masked owl, will utilise non-natural habitat. Where native habitat has been lost or degraded, non-natural habitat can still function as a connection between higher quality native habitat for mobile species such as birds and large mammals. A limitation of this process is that neighbouring areas of habitat outside the study area are not considered when identifying habitat corridors between patches of core habitat.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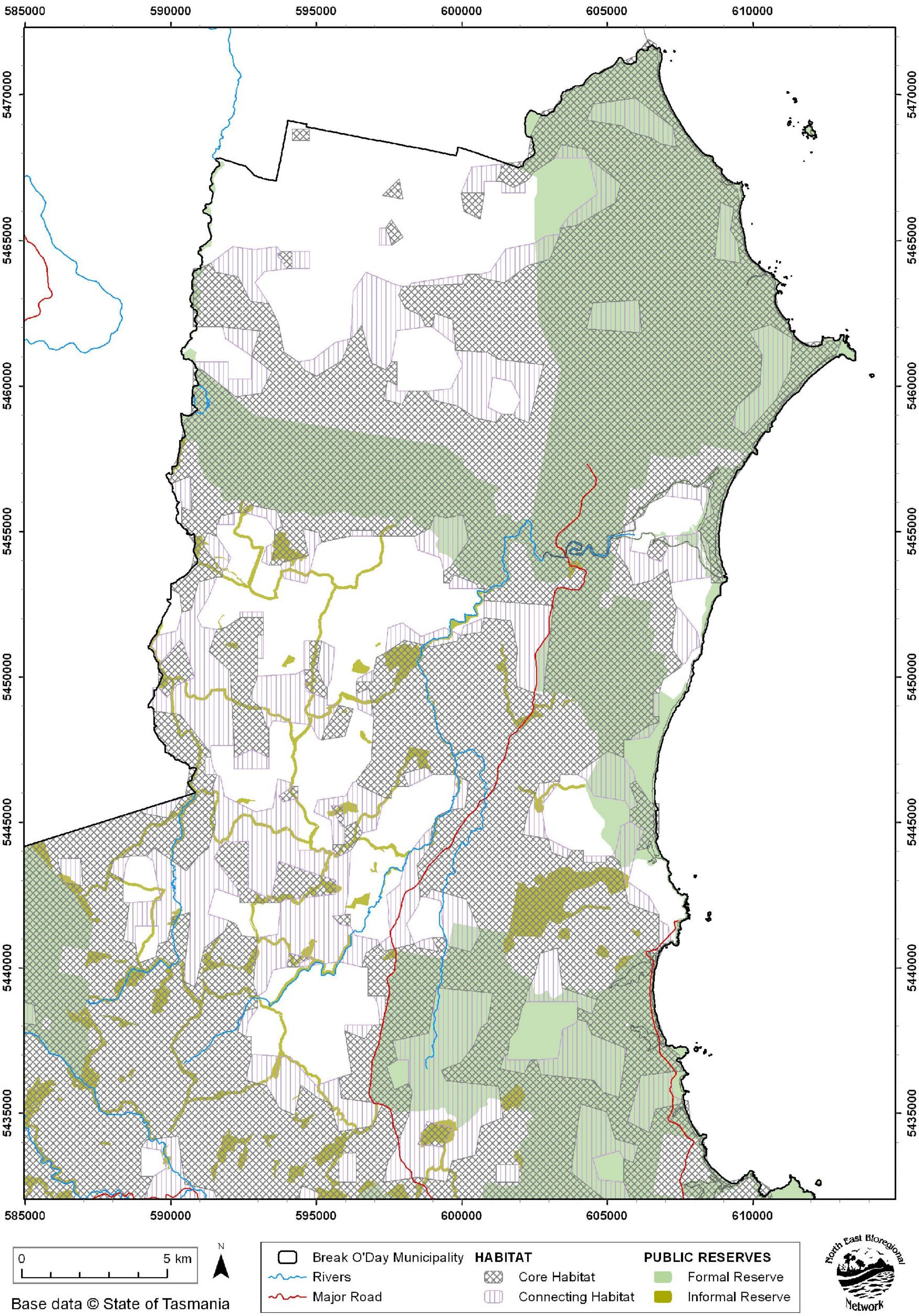
Base data © State of Tasmania
North East Bioregional Network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Base data © State of Tasmania
Break O'Day Municipality
Rivers
Major Road
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Formal Reserve
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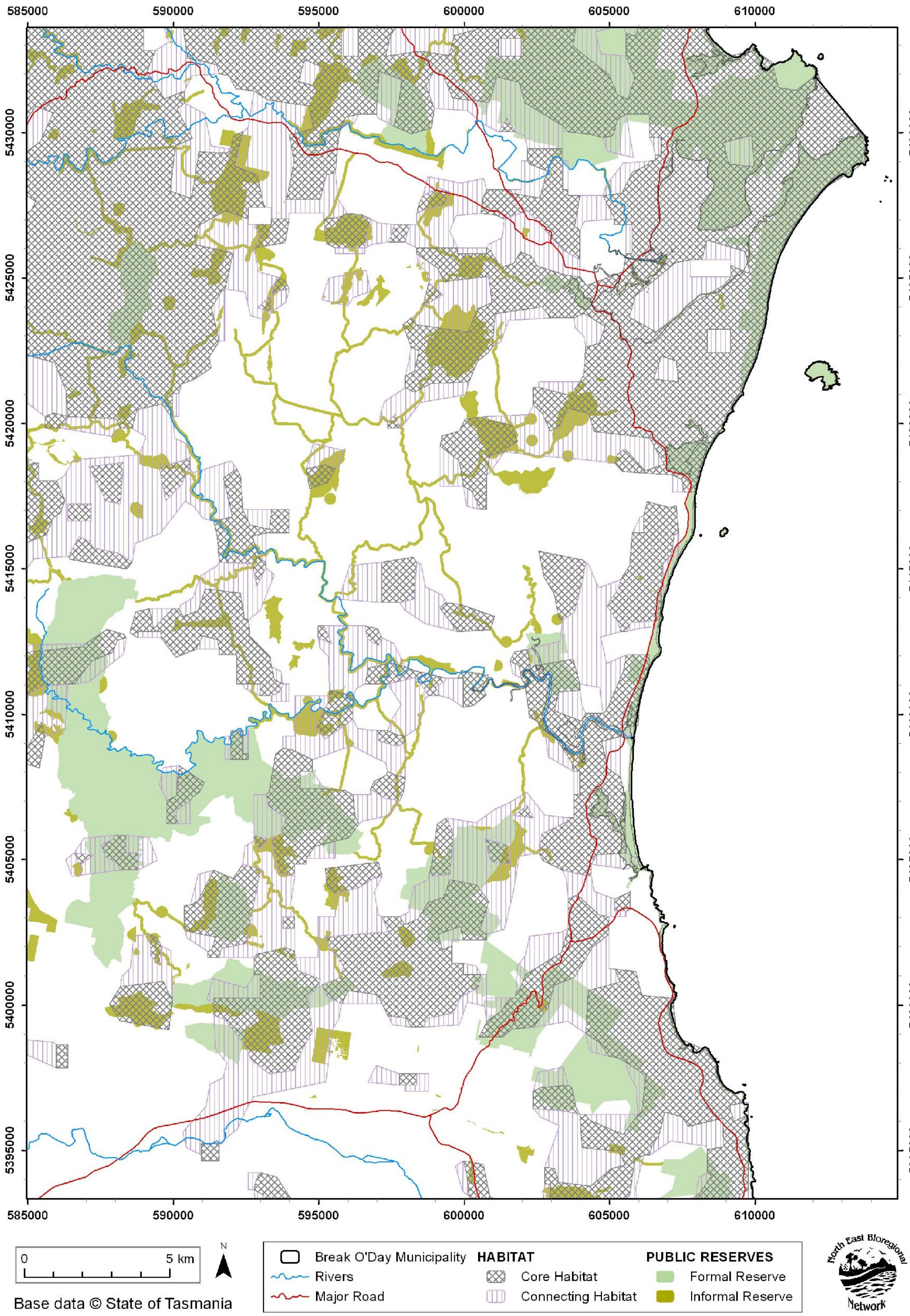
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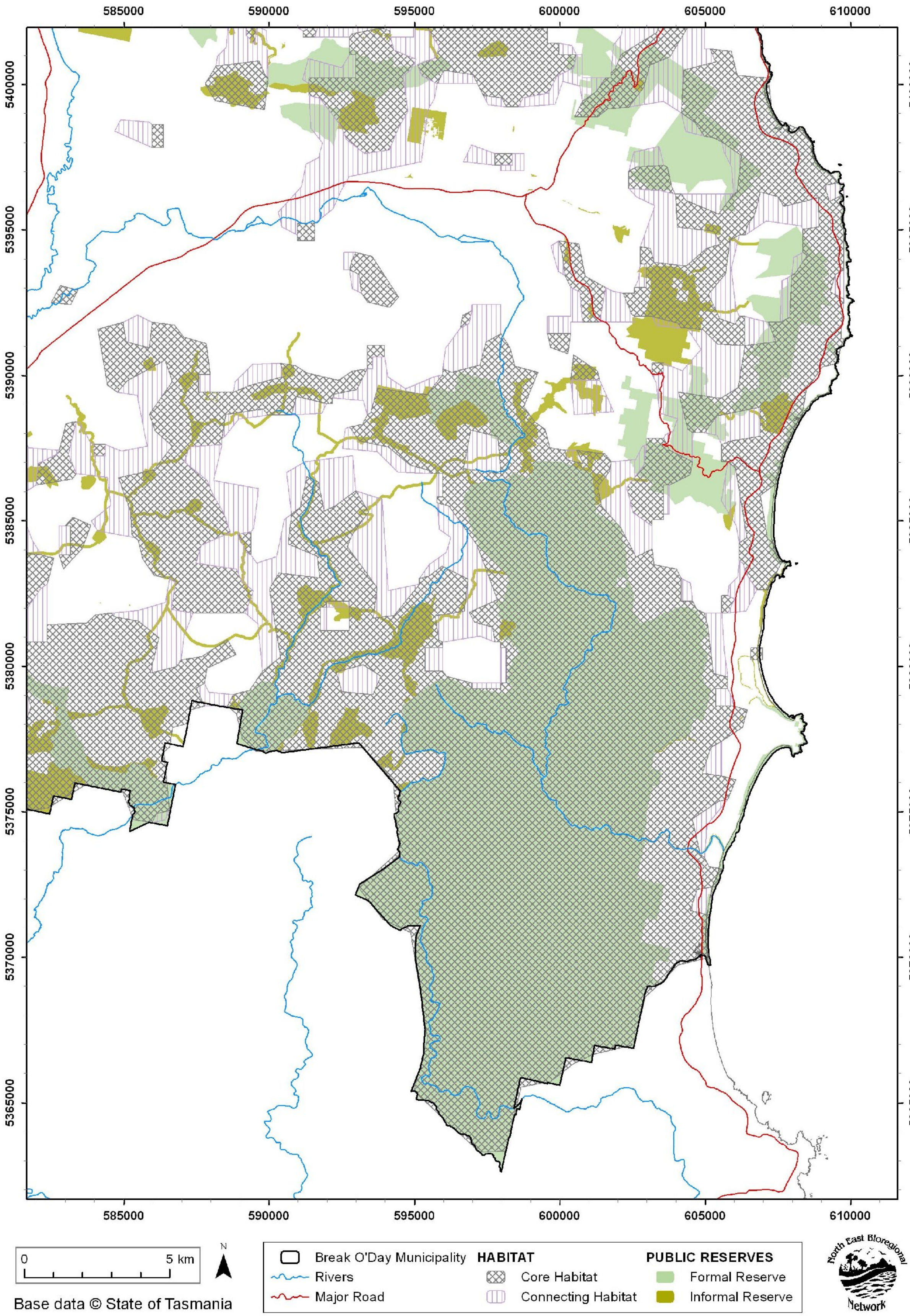
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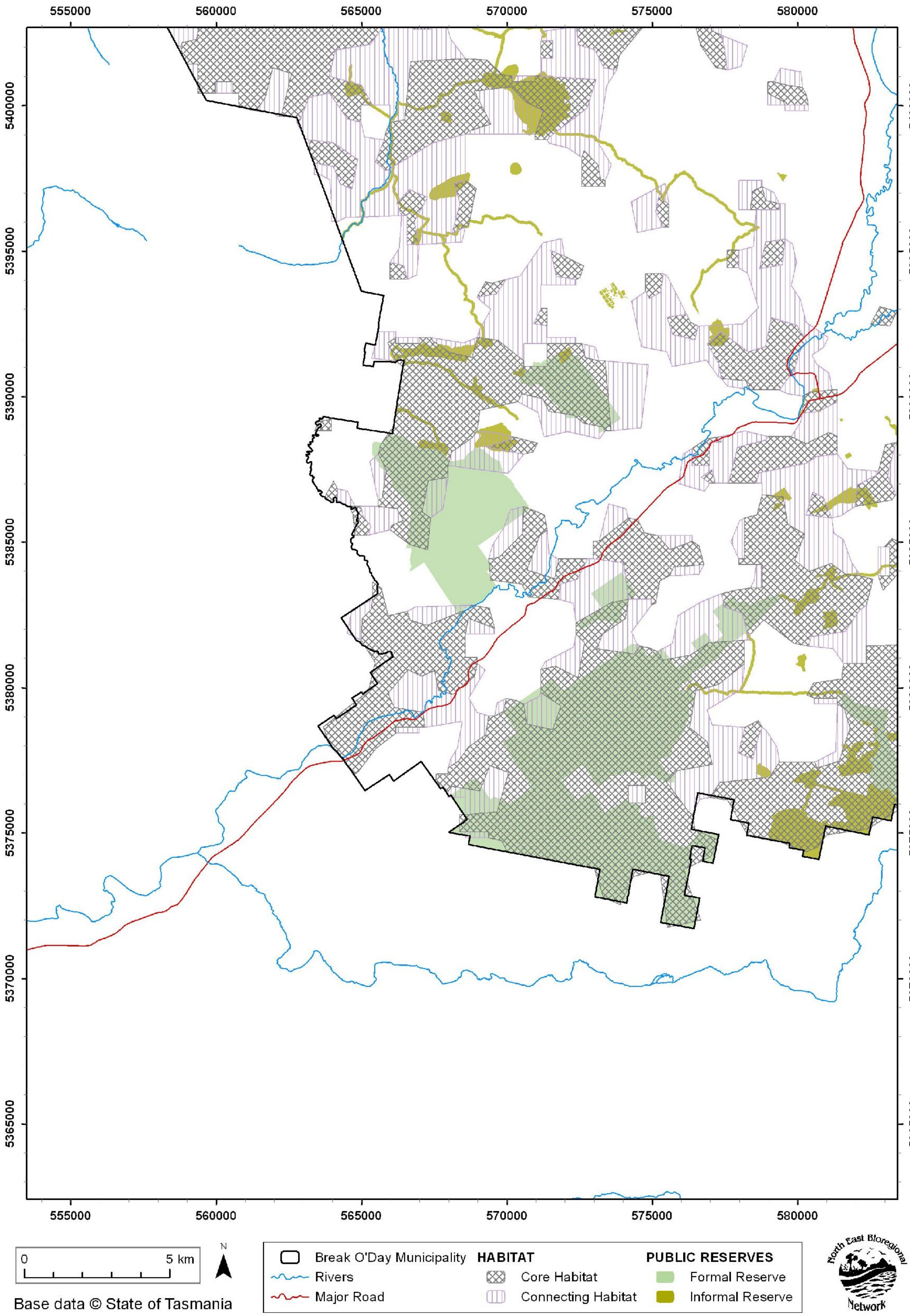
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Base data © State of Tasmania
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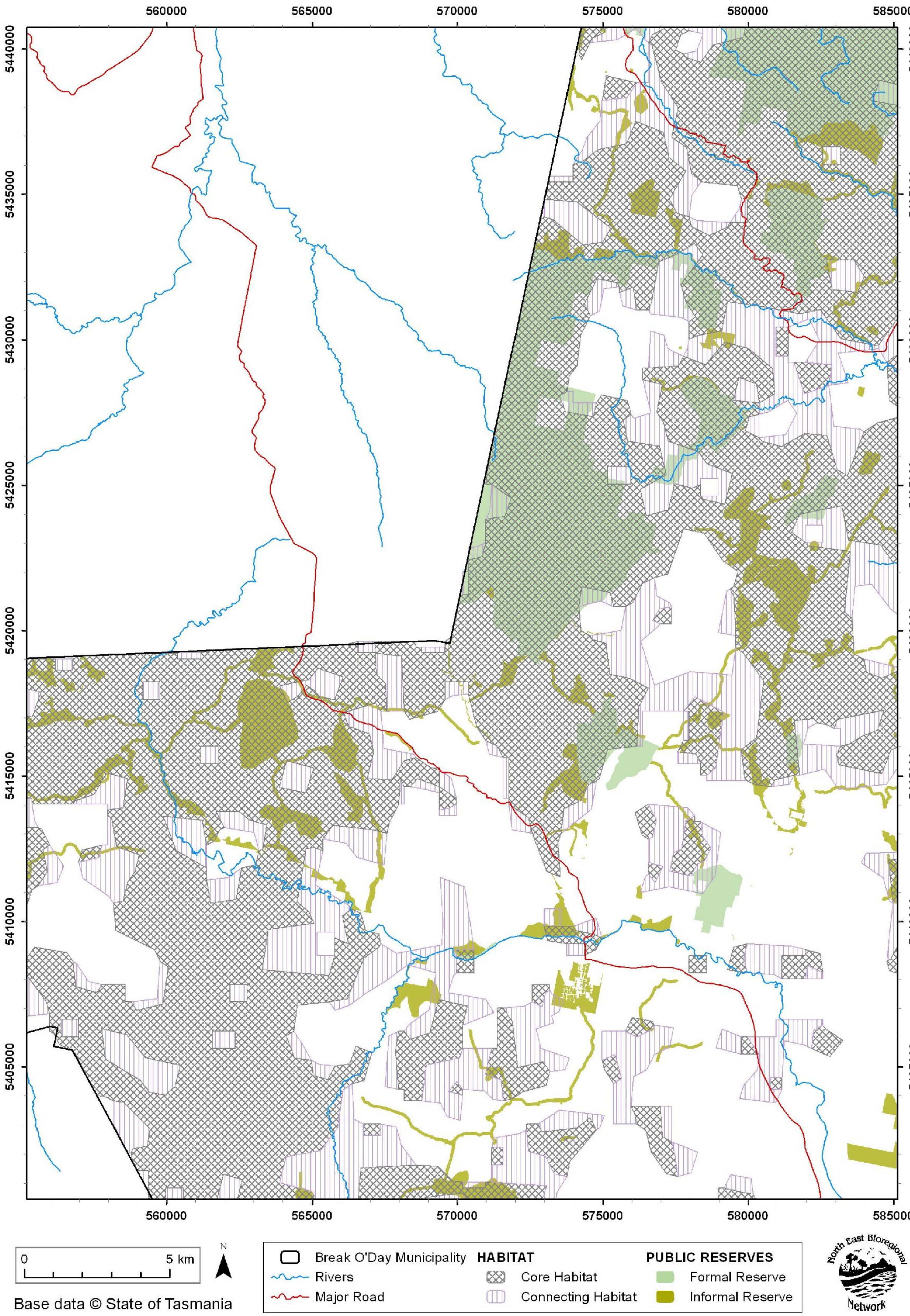
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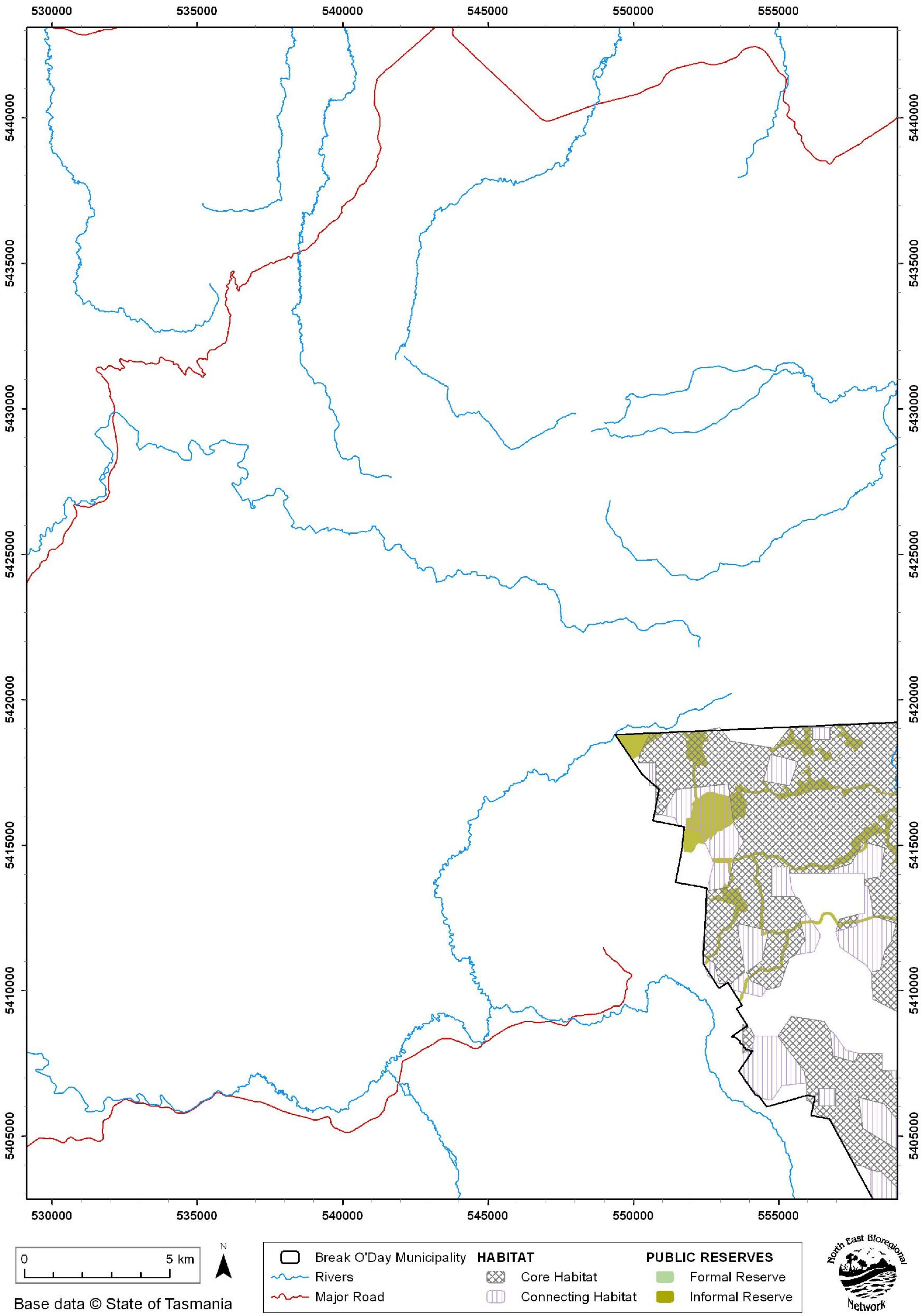
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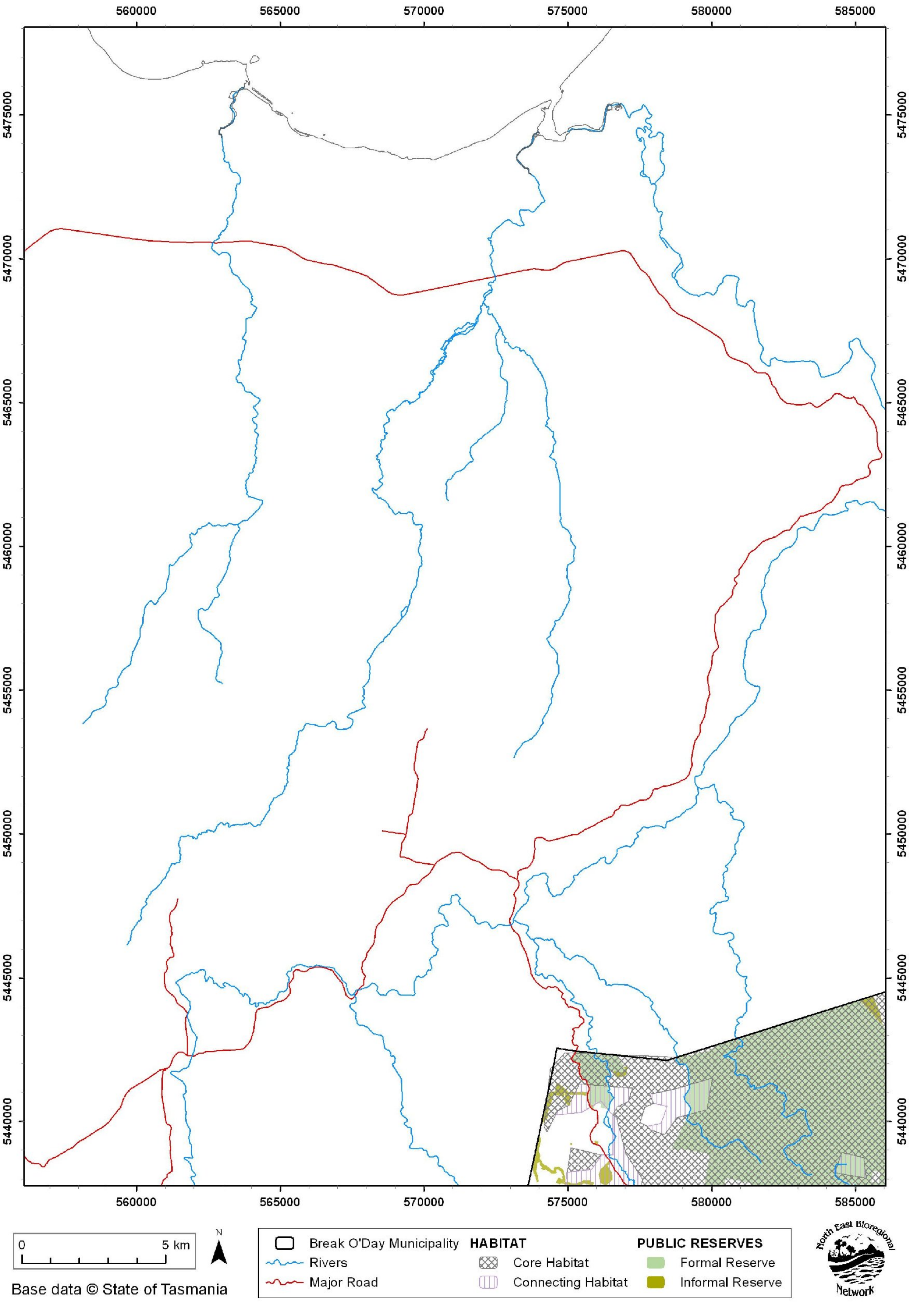
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Base data © State of Tasmania
Break O'Day Municipality
Rivers
Major Road
HABITAT
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Connecting Habitat
PUBLIC RESERVES
Formal Reserve
Informal Reserve
North East Bioregional Network

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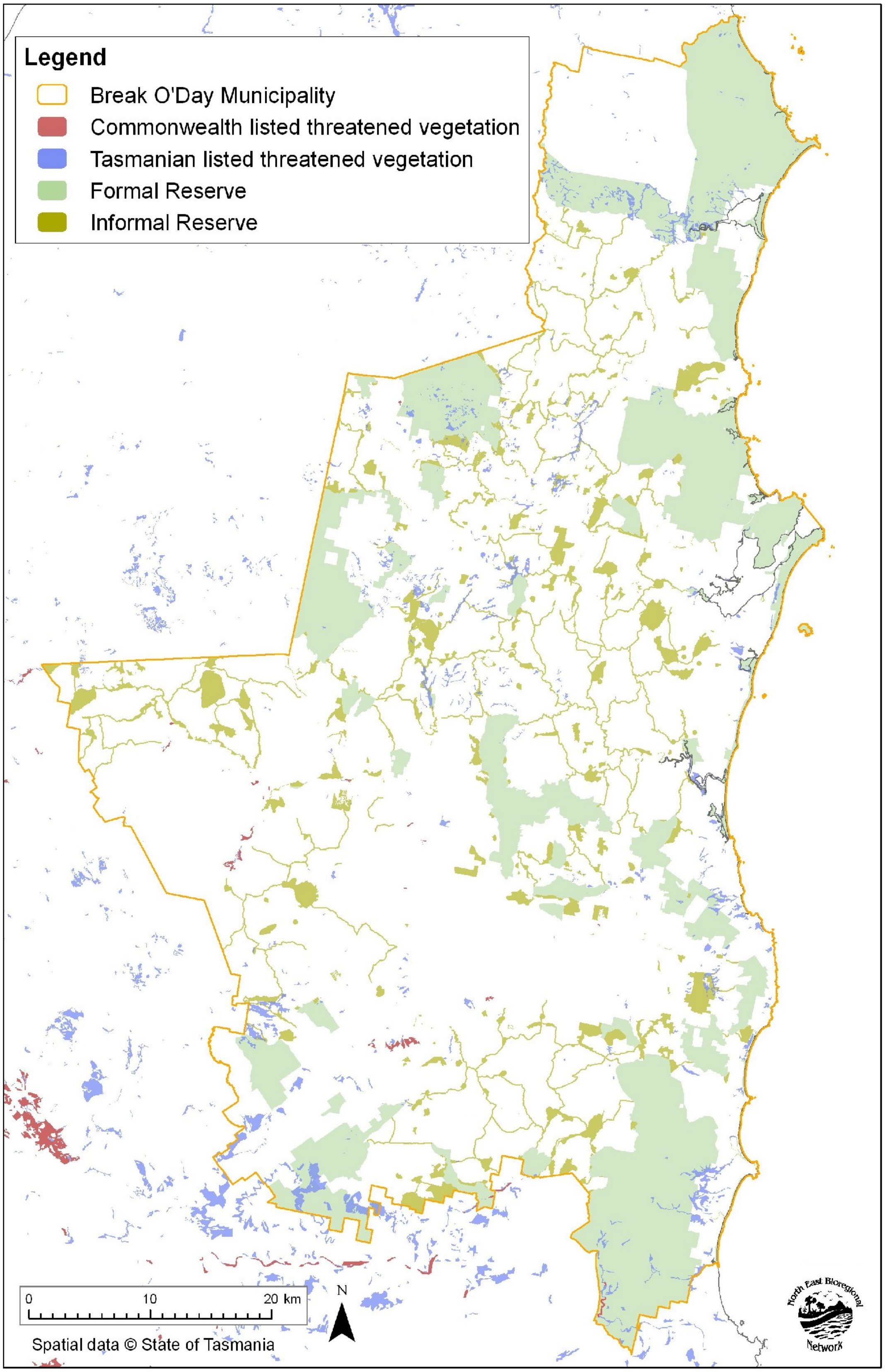
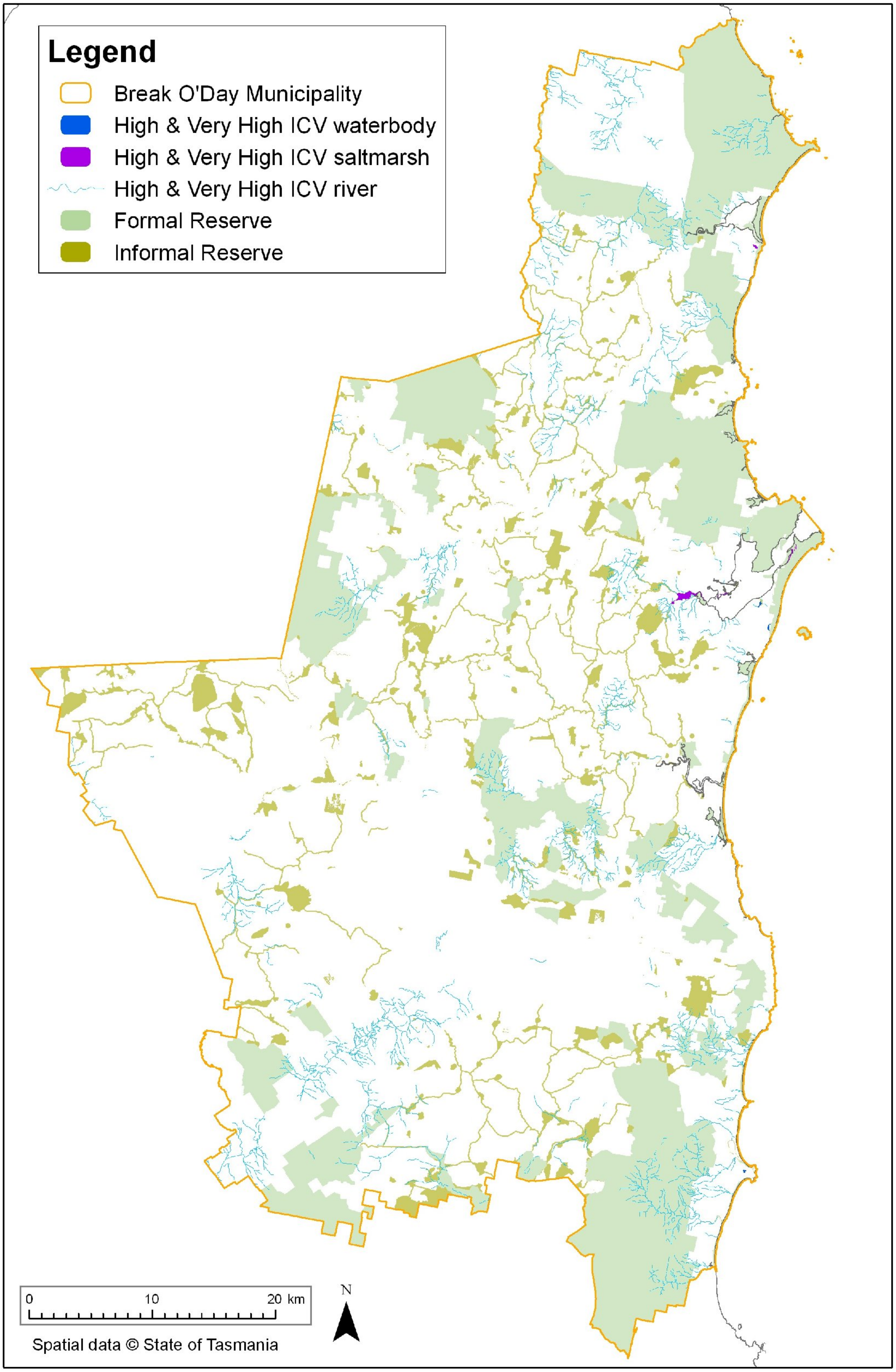
Acknowledgements

The Wilderness Society (Tasmania) for providing GIS support to this project.

Appendix 1 – Maps of habitat values in the Break O'Day Municipality

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High & Very High ICV waterbody
High & Very High ICV saltmarsh
High & Very High ICV river
Formal Reserve
Informal Reserve
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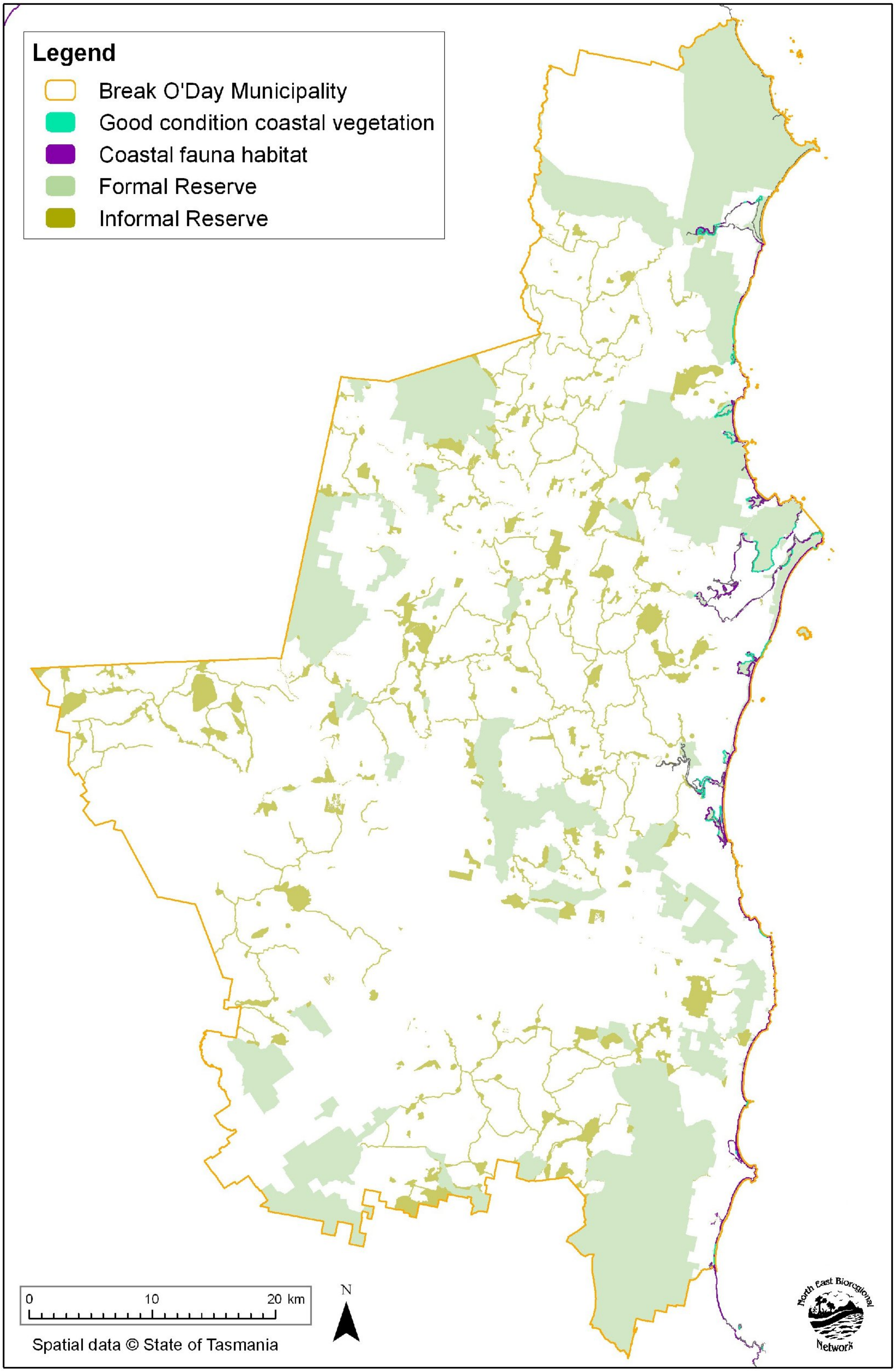
Spatial data © State of Tasmania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Good condition coastal vegetation
Coastal fauna habitat
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Informal Reserve
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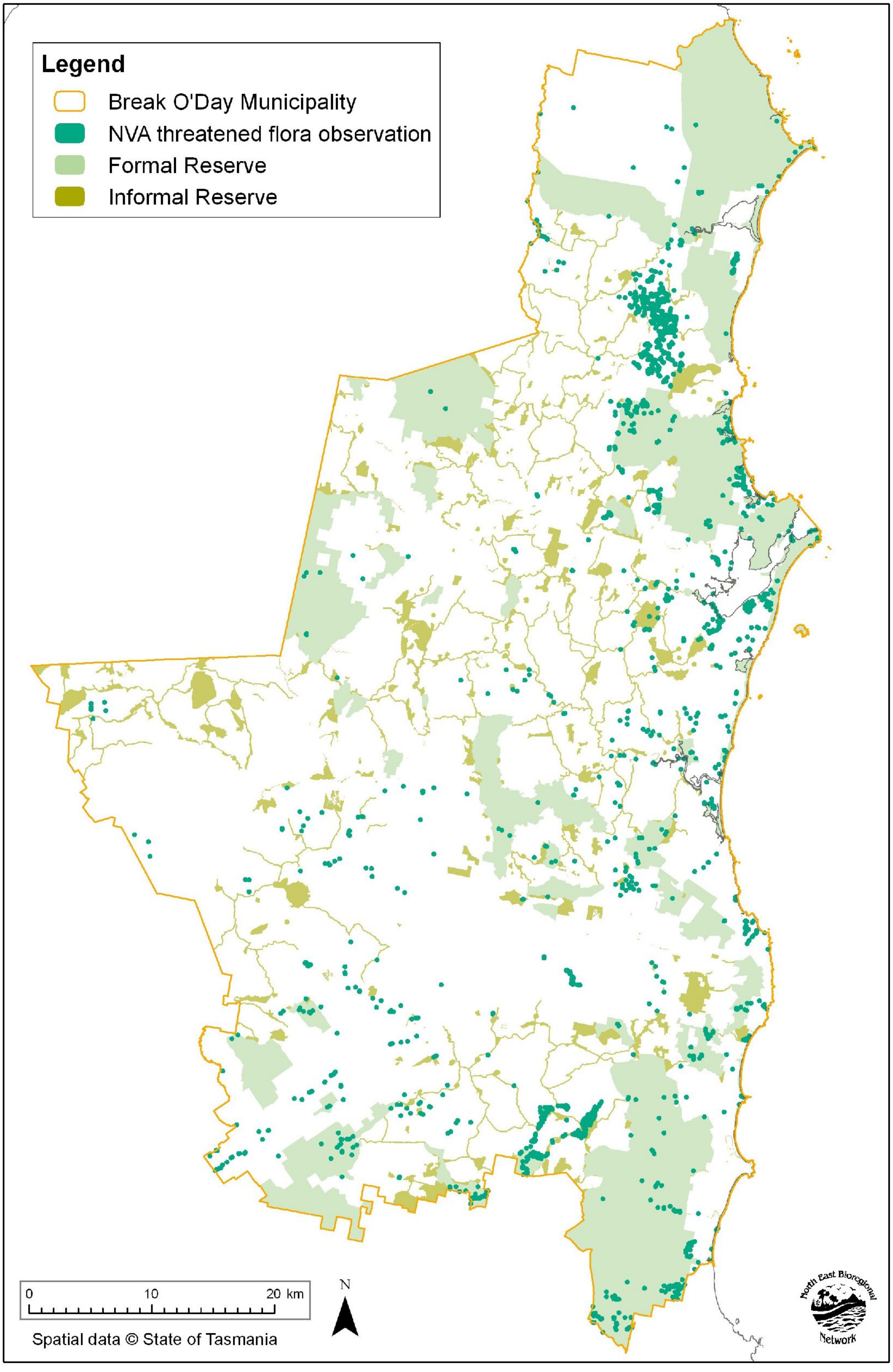
North East Bioregional Network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NVA threatened flora observation
Formal Reserve
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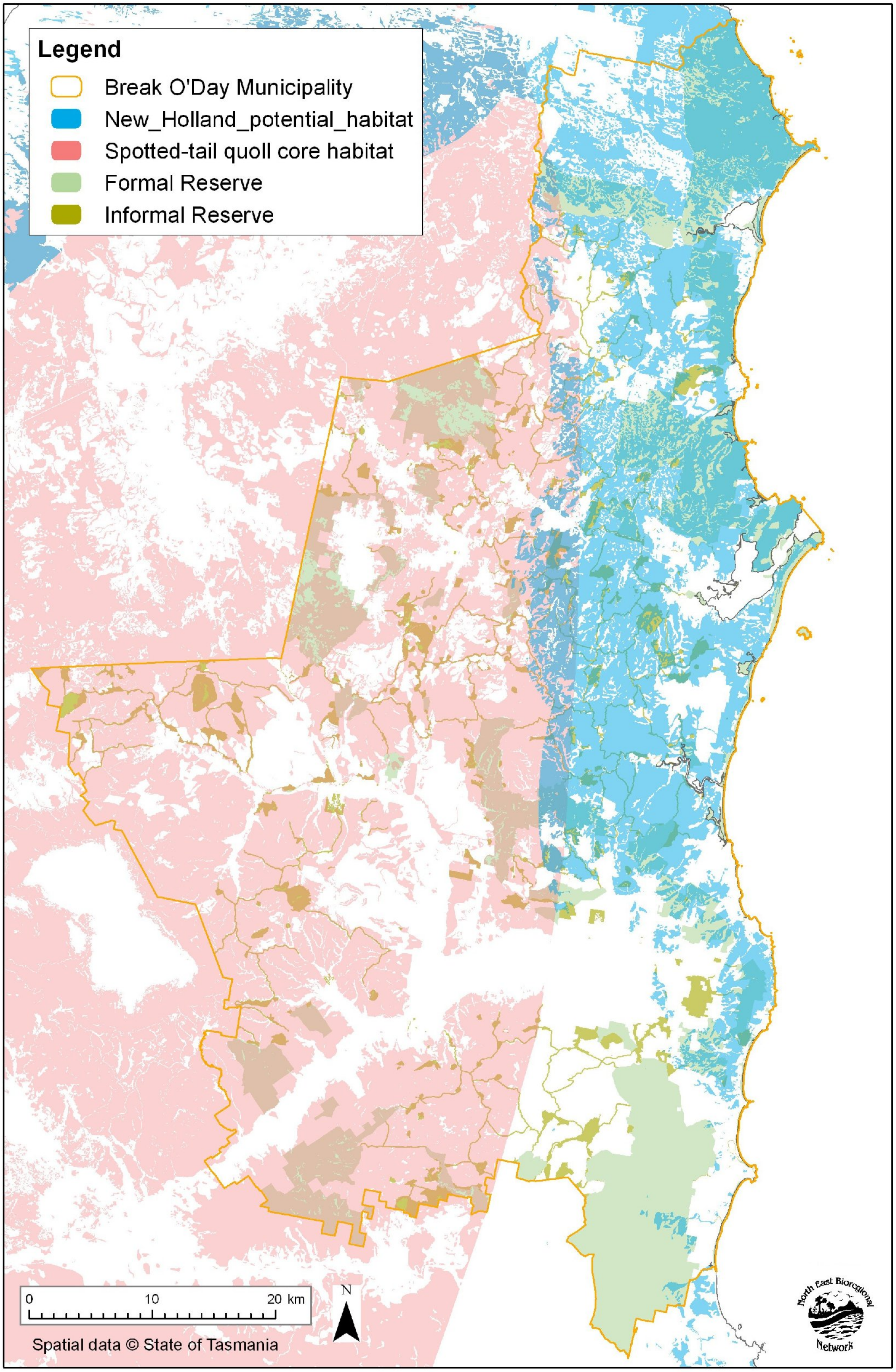
Spatial data © State of Tasmania
North East Bioregional Network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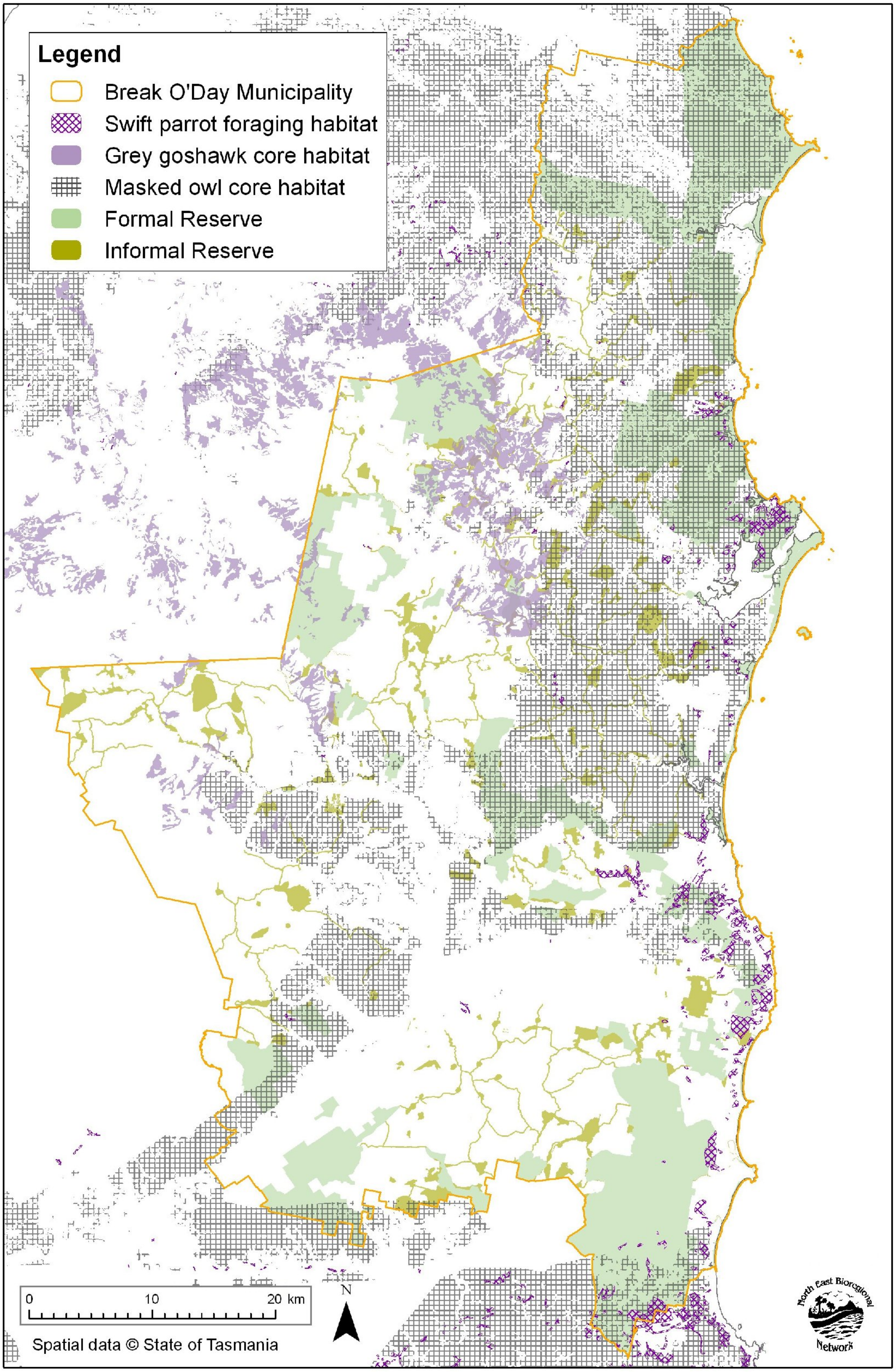
Spatial data © State of Tasmania
North East Bioregional Network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Break O'Day Municipality
Swift parrot foraging habitat
Grey goshawk core habitat
Masked owl core habitat
Formal Reserve
Informal Reserve
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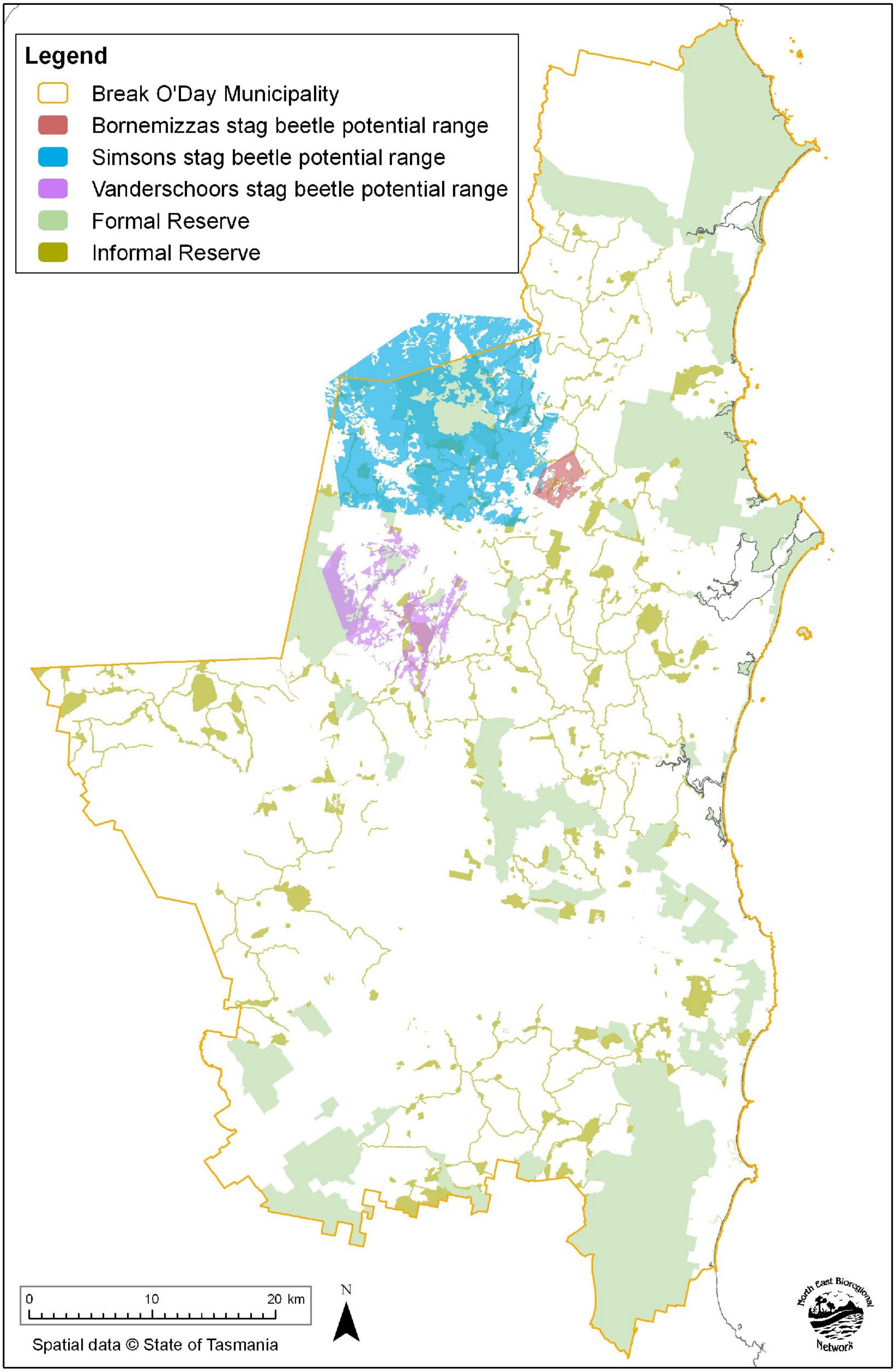
Spatial data © State of Tasmania
North East Bioregional Network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Break O'Day Municipality
Bornemizzas stag beetle potential range
Simsons stag beetle potential range
Vanderschoors stag beetle potential range
Formal Reserve
Informal Reserve
0
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20 km
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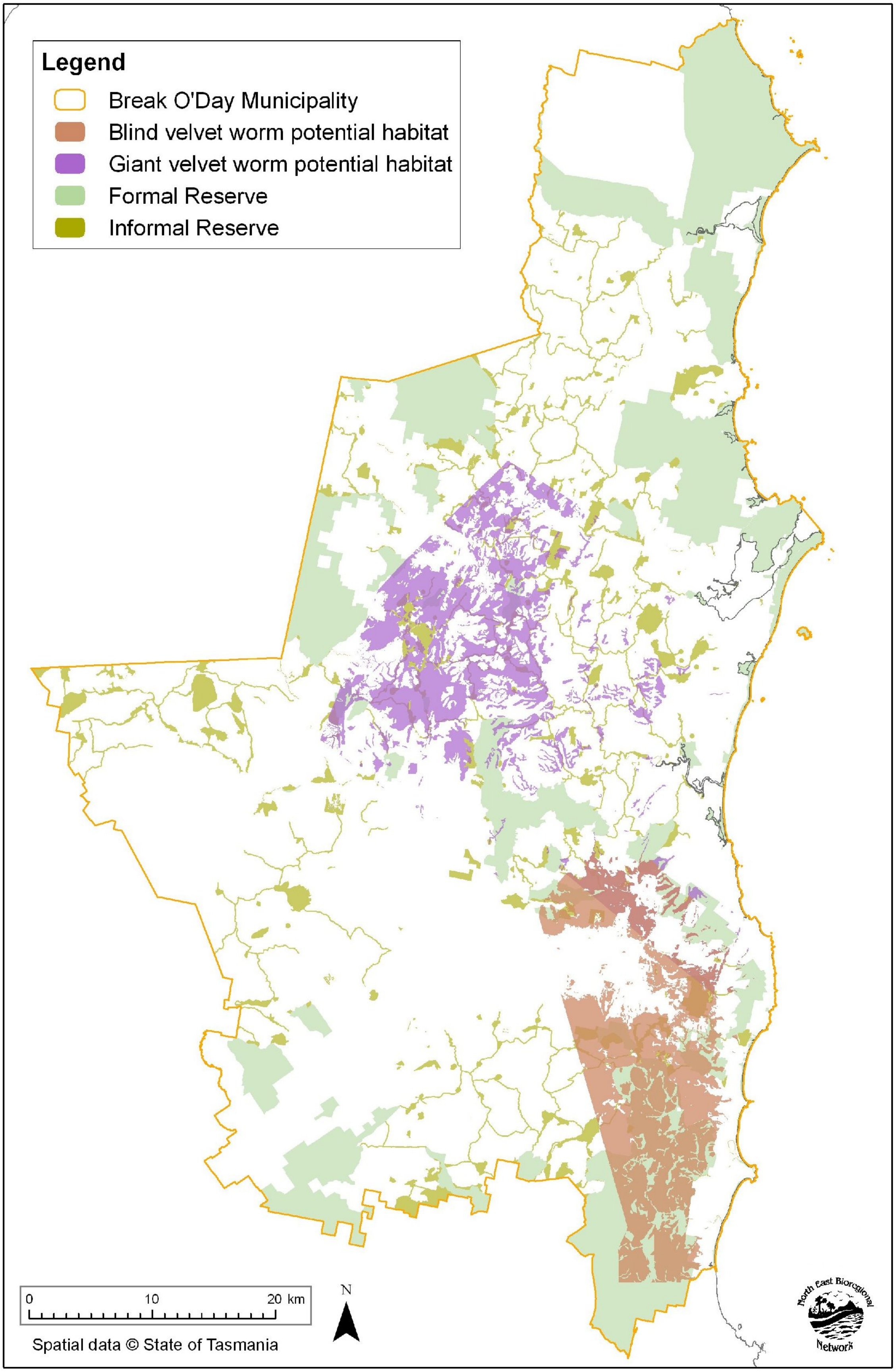
Spatial data © State of Tasmania
North East Bioregional Network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Break O'Day Municipality
Blind velvet worm potential habitat
Giant velvet worm potential habitat
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Informal Reserve
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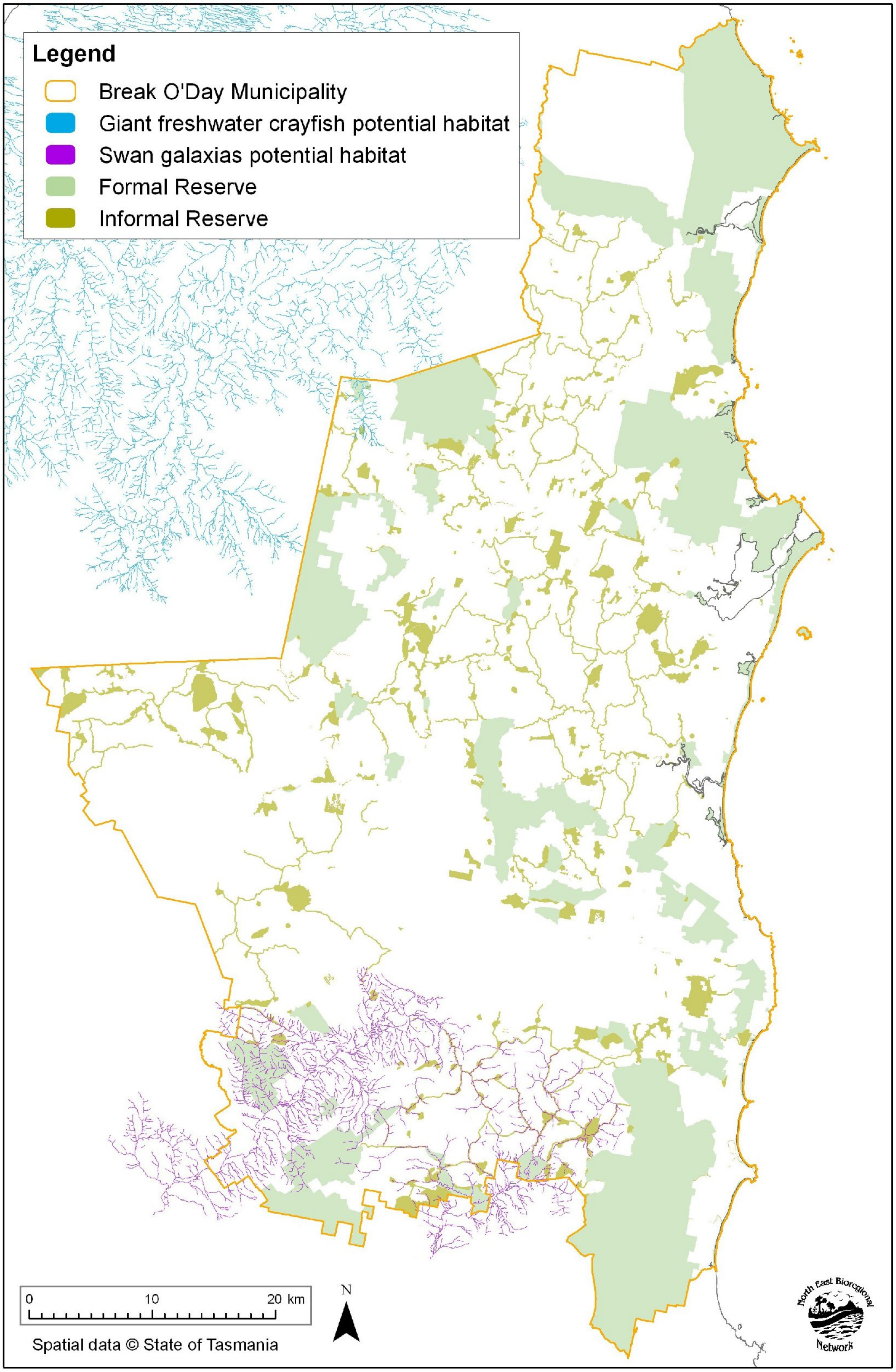
Spatial data © State of Tasmania
North East Bioregional Network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Break O'Day Municipality
Giant freshwater crayfish potential habitat
Swan galaxias potential habitat
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Informal Reserve
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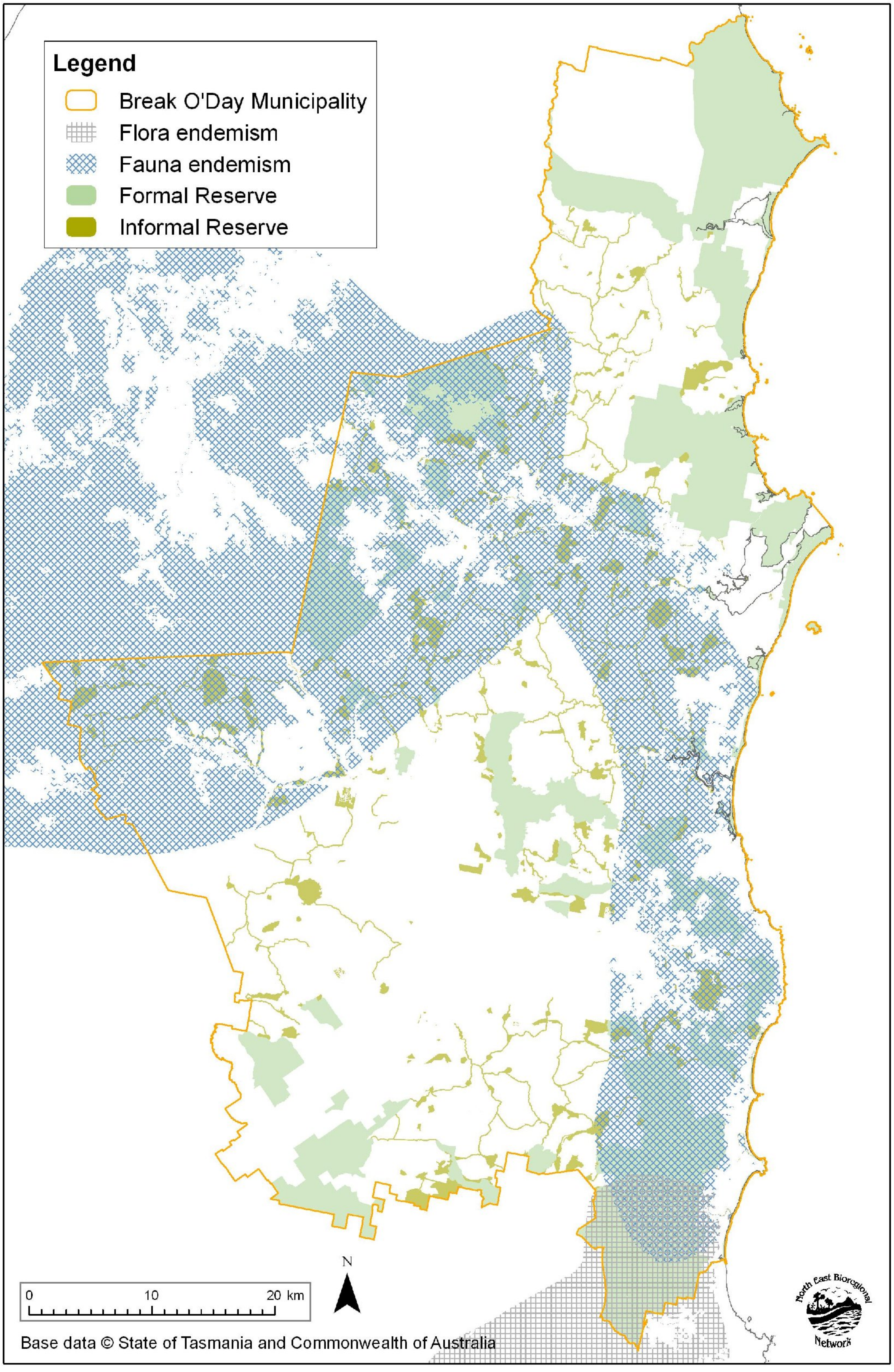
North East Bioregional Network


Legend
Break O'Day Municipality
Flora endemism
Fauna endemism
Formal Reserve
Informal Reserve
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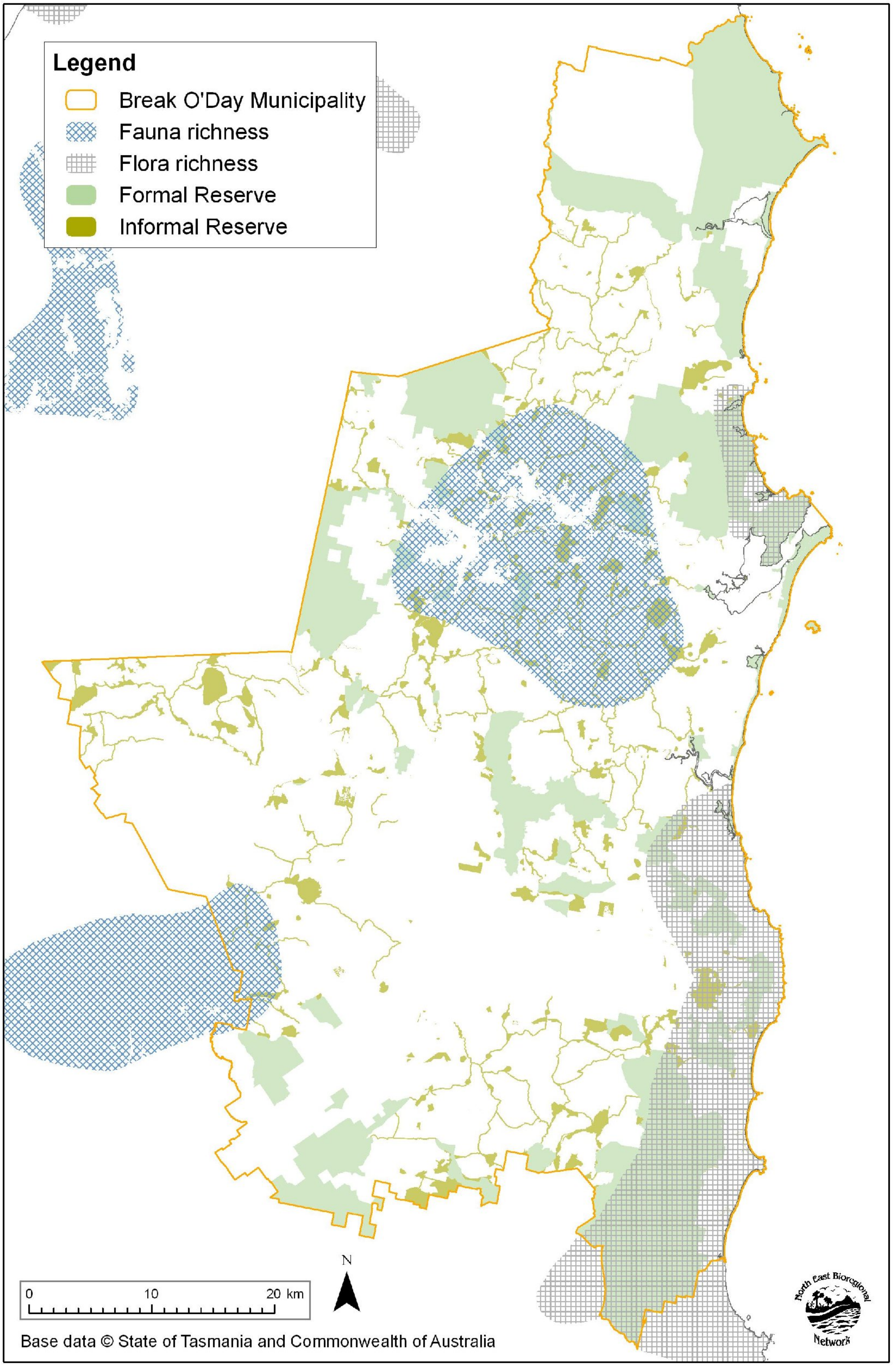
20 km
Base data © State of Tasmania and Commonwealth of Australia
North East Bioregional Network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Break O'Day Municipality
Fauna richness
Flora richness
Formal Reserve
Informal Reserve
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20 km
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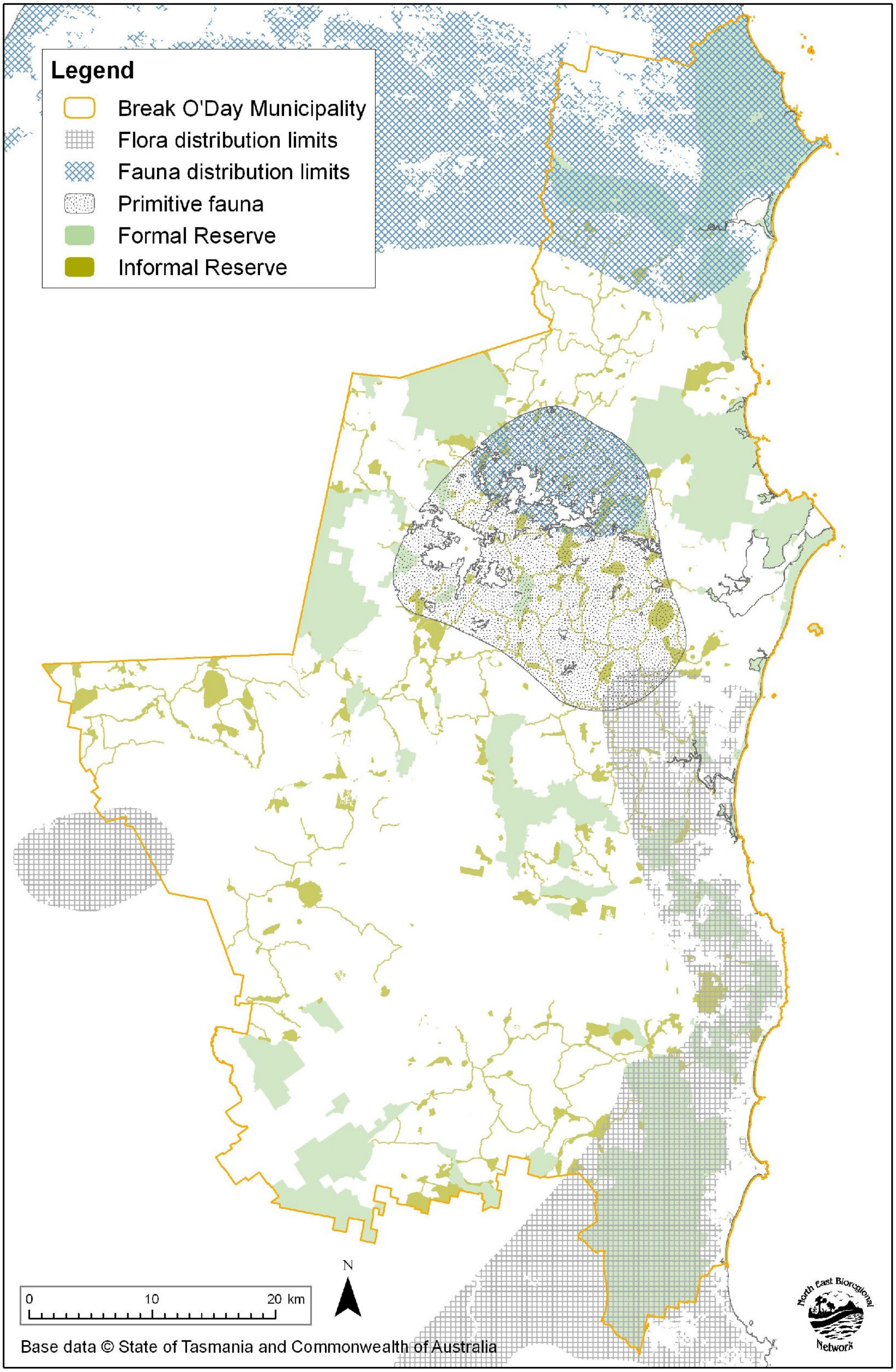
Base data © State of Tasmania and Commonwealth of Australia
North East Bioregional Network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Break O'Day Municipality
Flora distribution limits
Fauna distribution limits
Primitive fauna
Formal Reserve
Informal Reserve
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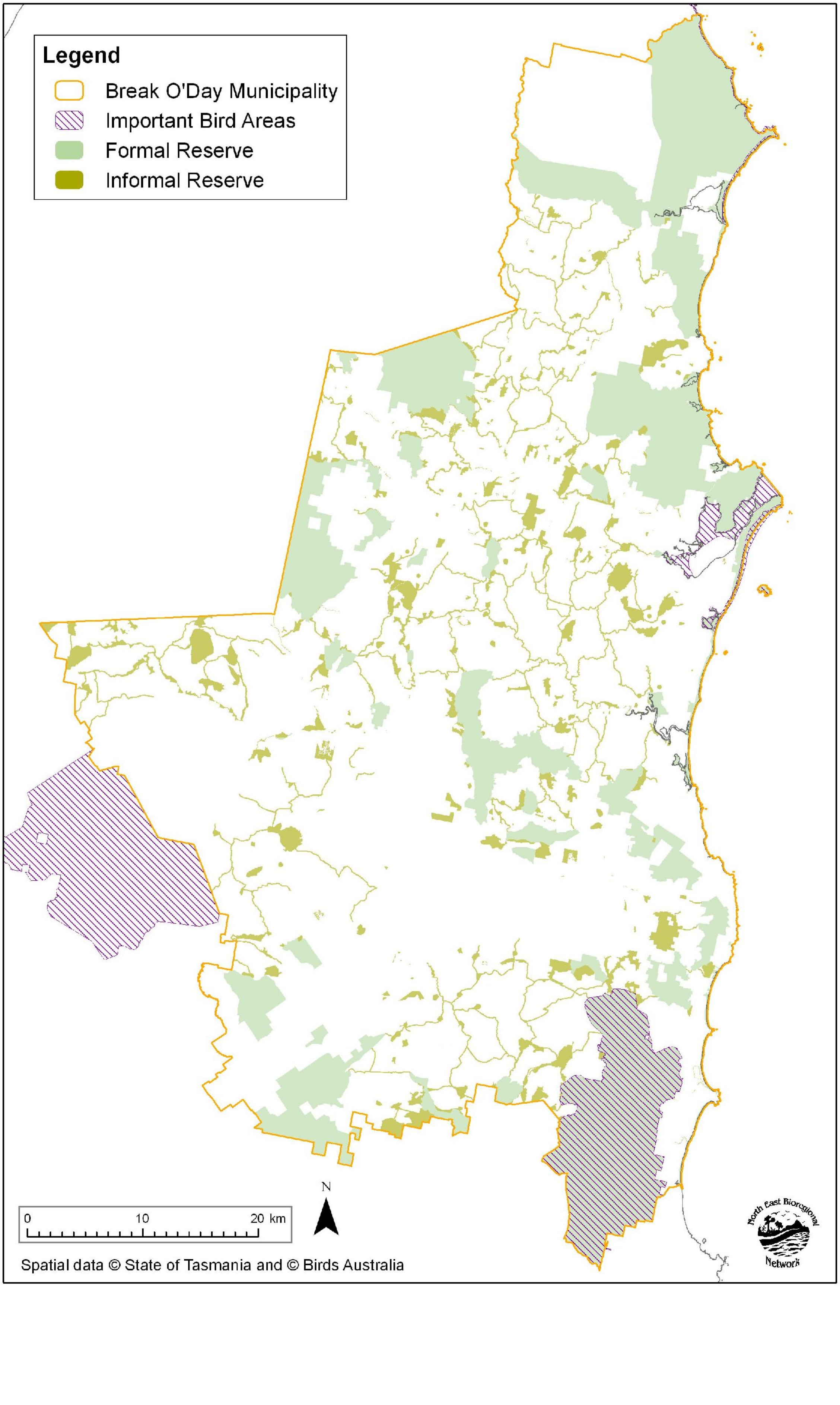
North East Bioregional Network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Break O'Day Municipality
Important Bird Areas
Formal Reserve
Informal Reserve
N
0
10
20 km
Spatial data © State of Tasmania and © Birds Australia
North East Bioregional Network

Appendix 2 – List of Assets

ID	NAME	DESCRIPTION	EXTENT IN BO'D (Ha)	RARE IN BIOREG ION	STATE RARE	VULNER ABLE/ ENDAN GERED	TARGE T
1	LNGT	Lowland native grasslands				E	1.0
2	C.OBLONGA	Callitris oblonga/ E. ovata forest				E	1.0
3	CFEV WBODY	Waterbody with ICV of H or VH					1.0
4	CFEV RIVER	River with ICV of H or VH					1.0
5	CFEV SALTMSH	Saltmarsh with ICV of H or VH					1.0
6	BLIND VW	Blind velvet worm potential habitat					1.0
7	GIANT VW	Giant velvet worm potential habitat					1.0
8	BORN SB	Bornemizza Stag Beetle potential habitat					1.0
9	SIMSON SB	Simsons Stag Beetle potential habitat					1.0
10	VAND SB	Vanderschoors Stag Beetle potential habitat					1.0
11	GF CRAY	Giant freshwater crayfish potential habitat					1.0
12	SWAN GLX	Swan galaxias potential habitat					1.0
13	NH MOUSE	New Holland Mouse potential habitat					1.0
14	ST QUOLL	Spotted-tail quoll potential habitat					1.0
15	MASK OWL	Masked owl potential habitat					1.0
16	GOSHAWK	Grey goshawk potential habitat					1.0
17	THR RAPTOR NEST	Threatened raptor species nest 100 m buffer					1.0
18	GLOBMAP	Swift parrot habitat					1.0

19	IBA	Important bird area (Birds Australia)					1.0
20	RICH FLORA						1.0
21	RICH FAUNA						1.0
22	PRIM FAUNA						1.0
23	DISTLIM FLORA						1.0
24	DISTLIM FAUNA						1.0
25	ENDCENT FLORA						1.0
26	ENDCENT FAUNA						1.0
27	THREATFLORA	Threatened flora species 200m buffer					1.0
28	THREATFAUNA	Threatened fauna species 200m buffer					1.0
29	COAST VEG CONDN	Coastal Values - Native Veg in good condition					1.0
30	COAST POTFAUNA	Coastal Values - Potential fauna habitat					1.0
31	OLDGROWTH	Old growth forest (updated from RFA)					1.0
32	ASS F		2.3	N			0.0
33	AUS F		184.8	N			0.0
34	AWU F		244.1	N		V	1.0
35	AWU SE		4.5	N		V	1.0
36	DAC BL		9734.3	N			0.0
37	DAC F		29871.4	N			0.0
38	DAC NM		616.0	N			0.0
39	DAC SE		71.6	N			0.0
40	DAD BL		5122.9	N			0.0
41	DAD F		54.7	N			0.0
42	DAD NM		1121.3	N			0.0

43	DAD SE		7603.9	N			0.0
44	DAI BL		344.5	N			0.0
45	DAM BL		15079.0	N			0.0
46	DAM F		599.8	N			0.0
47	DAM NM		2990.9	N			0.0
48	DAM SE		40.4	N			0.0
49	DAS BL		661.4	N		V	1.0
50	DAS NM		72.4	N		V	1.0
51	DAS SE		475.2	N		V	1.0
52	DAZ BL		379.8	N		V	1.0
53	DAZ NM		453.9	N		V	1.0
54	DAZ SE		12.3	N		V	1.0
55	DBA BL		10.7	R			1.0
56	DBA SE		37.2	R			1.0
57	DCO BL		100.9	N			0.0
58	DDE BL		24701.2	N			0.0
59	DDE NM		700.3	N			0.0
60	DDE SE		2376.4	N			0.0
61	DGL BL		168.2	N		V	1.0
62	DGL F		199.2	N		V	1.0
63	DGL SE		24.6	N		V	1.0
64	DOB BL		9362.0	N			0.0
65	DOB F		3963.7	N			0.0
66	DOB SE		104.2	N			0.0
67	DOV BL		87.2	N		E	1.0

68	DOV F		6.9	N		E	1.0
69	DOV SE		68.6	N		E	1.0
70	DPD BL		100.5	N			0.0
71	DPD SE		90.0	N			0.0
72	DPE BL		9.5	R			1.0
73	DPO BL		88.3	N			0.0
74	DPO SE		40.1	N			0.0
75	DPU BL		115.9	N			0.0
76	DPU F		46.0	R			1.0
77	DRO BL		852.6	N			0.0
78	DRO SE		28.1	N			0.0
79	DSC BL		567.7	N			0.0
80	DSC F		58.7	N			0.0
81	DSG BL		18130.6	N			0.0
82	DSG F		8090.5	N			0.0
83	DSO BL		21897.9	N			0.0
84	DSO F		10866.4	N			0.0
85	DSO NM		1469.1	N			0.0
86	DSO SE		488.3	N			0.0
87	DTD SE		134.4	N			0.0
88	DVC BL		29.1	R	R	V	1.0
89	DVC F		19.4	N	R	V	1.0
90	DVG BL		299.8	N			0.0
91	DVG F		22.0	N			0.0
92	DVG SE		753.2	N			0.0

93	DVS BL		97.5	N			0.0
94	DVS F		8.2	N			0.0
95	FAG BL		26242.2	N			0.0
96	FAG F		8930.4	N			0.0
97	FAG NM		2597.5	N			0.0
98	FAG SE		1819.6	N			0.0
99	FMG BL		2.2	R			1.0
100	FPE BL		381.4	N			0.0
101	FPE F		65.0	N			0.0
102	FPE NM		14.0	N			0.0
103	FPF BL		14.9	N			0.0
104	FPF F		117.0	N			0.0
105	FPF NM		43.0	N			0.0
106	FPL BL		20447.6	N			0.0
107	FPL F		2059.9	N			0.0
108	FPL NM		8.7	N			0.0
109	FPU BL		7121.8	N			0.0
110	FPU F		419.0	N			0.0
111	FPU NM		2.9	N			0.0
112	FRG BL		714.6	N			0.0
113	FRG F		311.3	N			0.0
114	FRG NM		149.3	N			0.0
115	FRG SE		14.9	N			0.0
116	FUM BL		312.9	N			0.0
117	FUM F		510.8	N			0.0

118	FUM NM		43.8	N			0.0
119	FUM SE		0.8	N			0.0
120	FWU BL		141.4	N			0.0
121	FWU F		21.9	N			0.0
122	FWU NM		919.7	N			0.0
123	FWU SE		10.3	N			0.0
124	GCL BL		359.1	N			0.0
125	GCL F		817.3	N			0.0
126	GCL NM		564.0	N			0.0
127	GCL SE		82.3	N			0.0
128	GHC F		70.4	N			0.0
129	GPH BL		190.0	N	R	E	1.0
130	GPL BL		72.3	N			0.0
131	GPL F		5.6	N			0.0
132	GPL NM		2.6	N			0.0
133	GSL BL		81.5	N			0.0
134	GSL F		19.0	N			0.0
135	GSL NM		44.0	N			0.0
136	GTL BL		3.2	R			1.0
137	GTL F		1.3	R			1.0
138	GTL NM		118.3	N			0.0
139	HHE BL		39.5	N			0.0
140	HSE BL		44.4	N			0.0
141	HUE BL		51.2	R			1.0
142	HWS BL		3.5	R			1.0

143	MBE BL		1261.6	N			0.0
144	MBS BL		146.7	N			0.0
145	MBU F		87.5	N			0.0
146	MGH BL		89.8	N	R		1.0
147	MRR BL		14.0	R			1.0
148	MSP BL		2.4	R			1.0
149	MSW BL		9.3	R			1.0
150	NAD BL		5001.5	N			0.0
151	NAD F		94.9	N			0.0
152	NAD SE		76.5	N			0.0
153	NAF BL		336.2	N			0.0
154	NAF F		37.6	N			0.0
155	NAL BL		133.8	N	R		1.0
156	NAL F		200.3	N	R		1.0
157	NAL SE		17.1	N	R		1.0
158	NAR BL		107.9	N			0.0
159	NAV BL		148.7	N			0.0
160	NAV F		72.4	N			0.0
161	NAV NM		19.6	N			0.0
162	NBA BL		32.6	N			0.0
163	NBA F		75.5	N			0.0
164	NBA NM		248.3	N			0.0
165	NBA SE		15.1	N			0.0
166	NCR SE		8.2	N	R		1.0
167	NLA BL		112.3	N			0.0

168	NLE BL		885.6	N			0.0
169	NLM BL		20.1	R			1.0
170	NLM F		0.9	R			1.0
171	NME BL		4.4	N	R	E	1.0
172	NME F		214.7	N	R	E	1.0
173	NME SE		0.9	R	R	E	1.0
174	NNP BL		21.2	N	R	E	1.0
175	OAQ BL		72.6	N			0.0
176	OAQ F		2784.9	N			0.0
177	OAQ NM		77.7	N			0.0
178	OAQ SE		87.4	N			0.0
179	ORO BL		366.9	N			0.0
180	ORO F		25.4	N			0.0
181	ORO NM		0.8	R			1.0
182	OSM BL		38.2	N			0.0
183	OSM F		641.9	N			0.0
184	OSM SE		80.2	N			0.0
185	RFE BL		1034.6	N	R		1.0
186	RLS BL		176.3	N			0.0
187	RLS SE		340.7	N			0.0
188	RML BL		2041.7	N			0.0
189	RMU BL		11114.8	N			0.0
190	RMU F		28.3	N			0.0
191	RMU SE		159.1	N			0.0
192	RPF BL		1.8	R			1.0

193	RSH BL		309.0	N			0.0
194	SAC BL		5.8	R			1.0
195	SAC F		551.0	N			0.0
196	SAC SE		161.3	N			0.0
197	SBM BL		1.8	R			1.0
198	SBR BL		1706.4	N			0.0
199	SBR F		88.1	N			0.0
200	SBR NM		20.8	N			0.0
201	SBR SE		213.6	N			0.0
202	SCH F		2541.1	N			0.0
203	SCH SE		21.9	N			0.0
204	SDU BL		86.3	N			0.0
205	SDU F		24.9	N			0.0
206	SDU SE		33.0	N			0.0
207	SHG BL		19.4	N			0.0
208	SHL BL		95.2	N			0.0
209	SHL F		840.8	N			0.0
210	SHL SE		28.1	N			0.0
211	SHS BL		509.3	N			0.0
212	SHU BL		28.4	N			0.0
213	SHU F		147.6	N			0.0
214	SHU SE		7.4	N			0.0
215	SHW BL		649.1	N			0.0
216	SHW F		2690.6	N			0.0
217	SHW SE		194.4	N			0.0

218	SLW BL		1824.1	N			0.0
219	SLW F		1062.7	N			0.0
220	SLW NM		1.0	R			1.0
221	SLW SE		674.9	N			0.0
222	SMM BL		52.6	N			0.0
223	SMR BL		110.9	N			0.0
224	SMR F		250.2	N			0.0
225	SMR SE		8.0	N			0.0
226	SRI BL		85.3	N		V	1.0
227	SRI F		472.4	N		V	1.0
228	SRI NM		29.6	N		V	1.0
229	SRI SE		191.7	N		V	1.0
230	SSC F		534.7	N			0.0
231	SSC SE		26.2	N			0.0
232	SWW BL		0.6	R			1.0
233	WBR BL		78.6	R		V	1.0
234	WDA BL		1572.7	N			0.0
235	WDB BL		10960.3	N			0.0
236	WDL BL		1305.2	N			0.0
237	WDR BL		3277.4	N			0.0
238	WDU BL		256.3	N			0.0
239	WDU NM		148.5	N			0.0
240	WDU SE		3292.2	N			0.0
241	WGL BL		18.8	R			1.0
242	WOB BL		13285.3	N			0.0

243	WOL BL		379.8	N			0.0
244	WOR BL		1476.9	N			0.0
245	WOU BL		584.5	N			0.0
246	WOU F		1464.7	N			0.0
247	WOU NM		14.5	N			0.0
248	WOU SE		3226.3	N			0.0
249	WRE BL		9532.9	N			0.0
250	WRE F		160.2	N			0.0
251	WSU BL		1.2	R			1.0
252	WVI BL		350.3	N			0.0
253	WVI F		13.5	R			1.0

Note: three-letter codes are unique TASVEG identifiers, see Harris and Kitchener (2005), followed by a two-letter code indicating bioregion (BL = Ben Lomond, F = Flinders, NM = Northern Midlands, SE = South East).