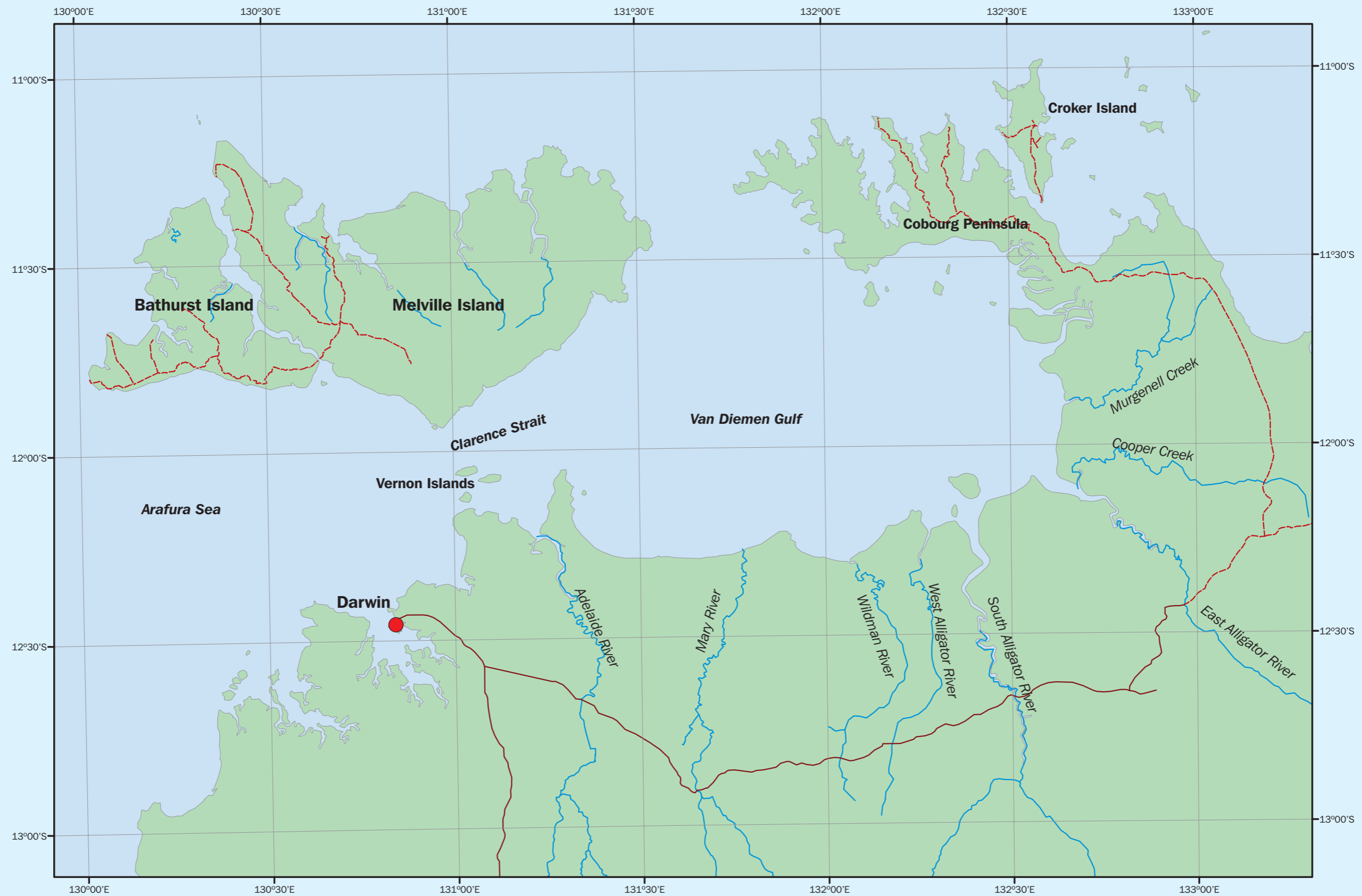


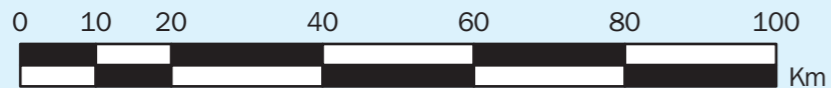


TIWI ISLANDS REGIONAL NATURAL RESOURCE MANAGEMENT STRATEGY

MAP ATLAS
TIWI LAND COUNCIL 2004

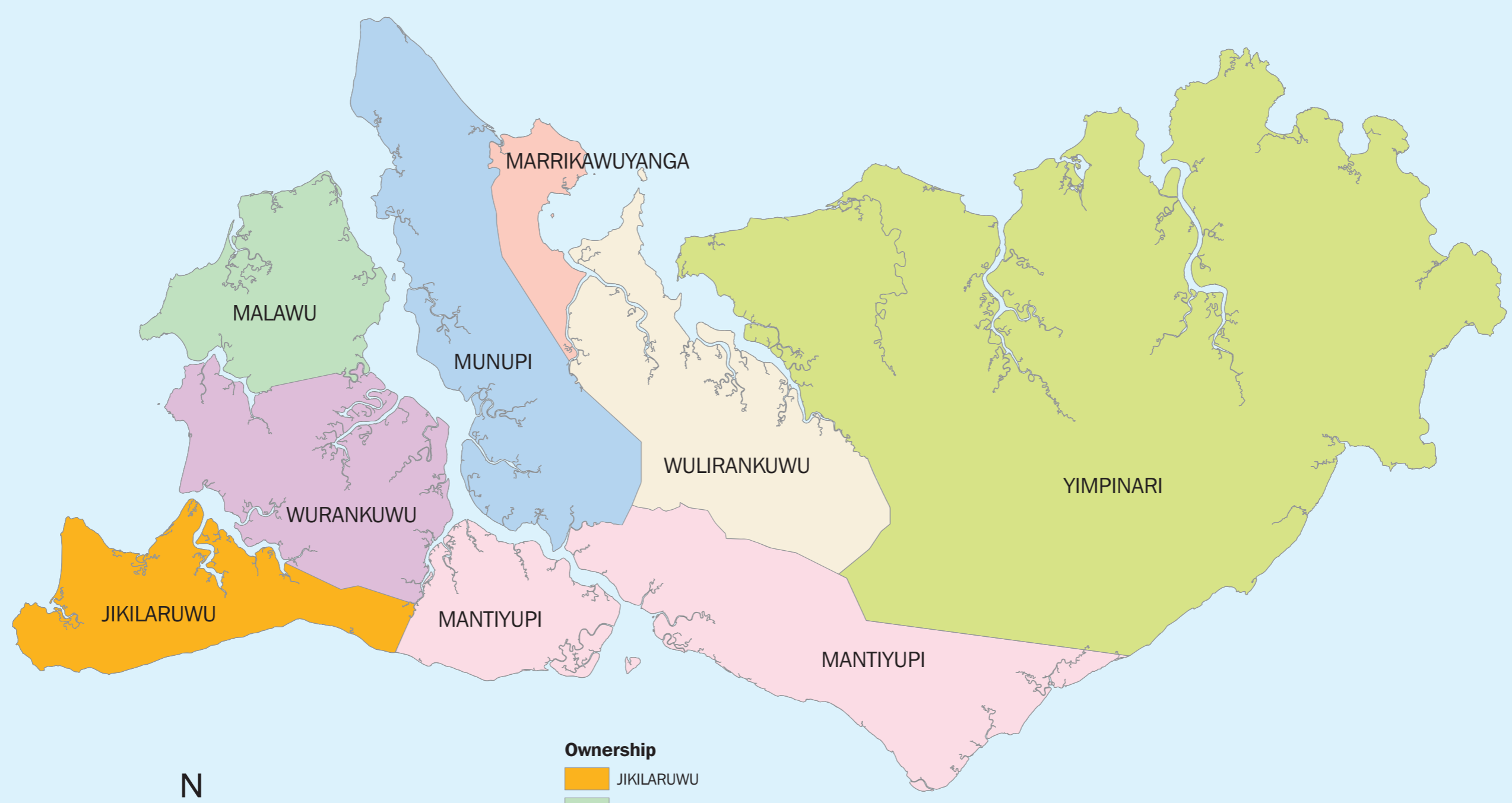


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Map 1 - Location of the Tiwi Islands





- Ownership**
- JIKILARUWU
 - MALAWU
 - MANTIYUPI
 - MARRIKAWUYANGA
 - MUNUPI
 - WULIRANKUWU
 - WURANKUWU
 - YIMPINARI



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Map 2 - Land Ownership





- Community**
- Nguuu
 - Milikapiti
 - Pirlangimpi
 - Wurangukuwu
 - ▲ Yimpinari outstation
 - ▲ Paru
 - ▲ Takamprimili outstation
 - ▲ Taracumbi outstation
 - Barra Base
 - Maxwell Creek
 - Pickertaramoor

- Roads**
- - - main roads
 - - - commonly used roads
 - Barge landings
 - Port of Meville
 - Licenced aerodromes
 - Landing areas
- RPT routes**
- - - Darwin-Nguuu-Darwin
 - - - Darwin-Pirlangimpi-Milikapiti-Darwin

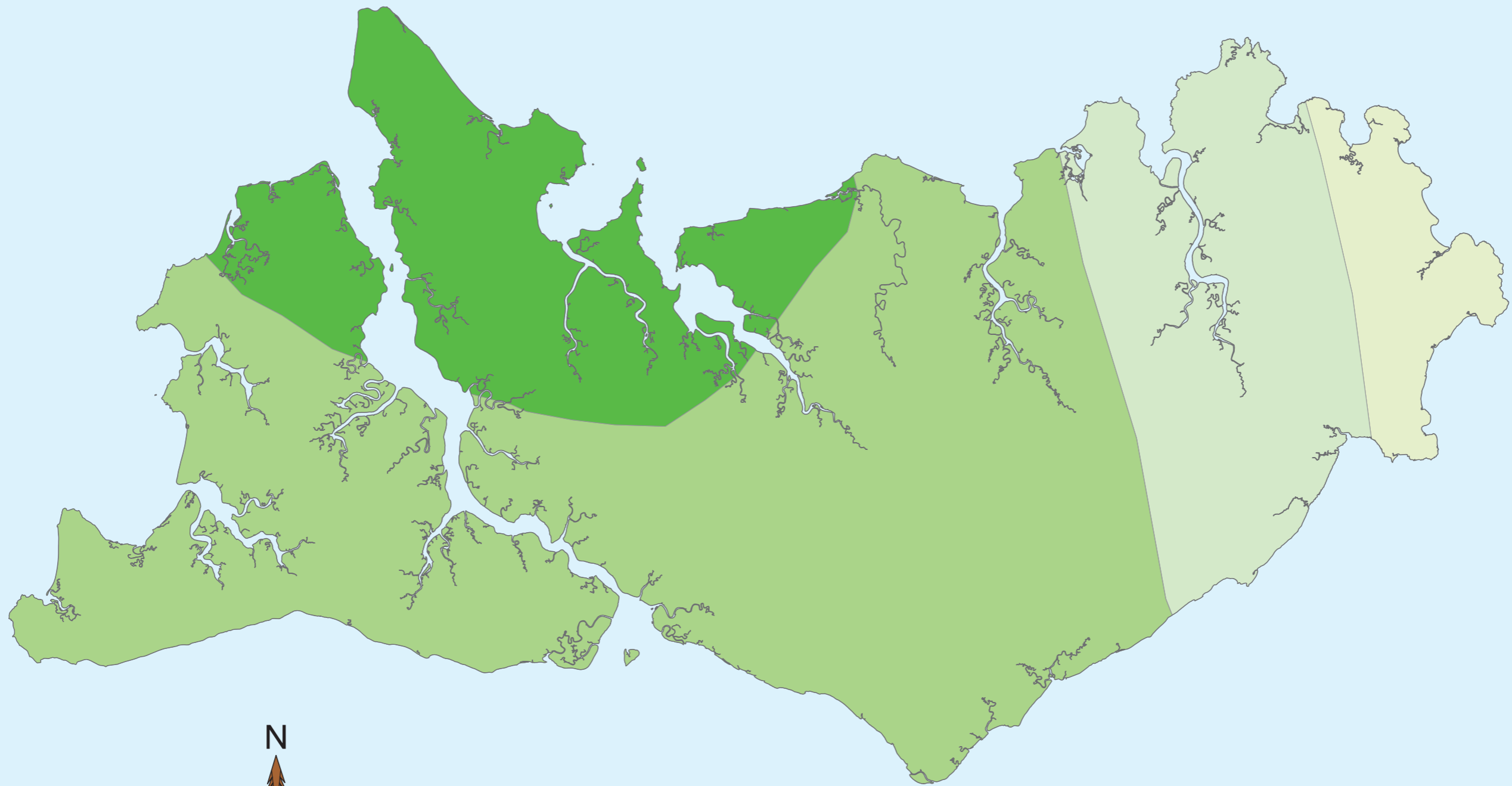


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To Darwin

Map 3 - Tiwi Region



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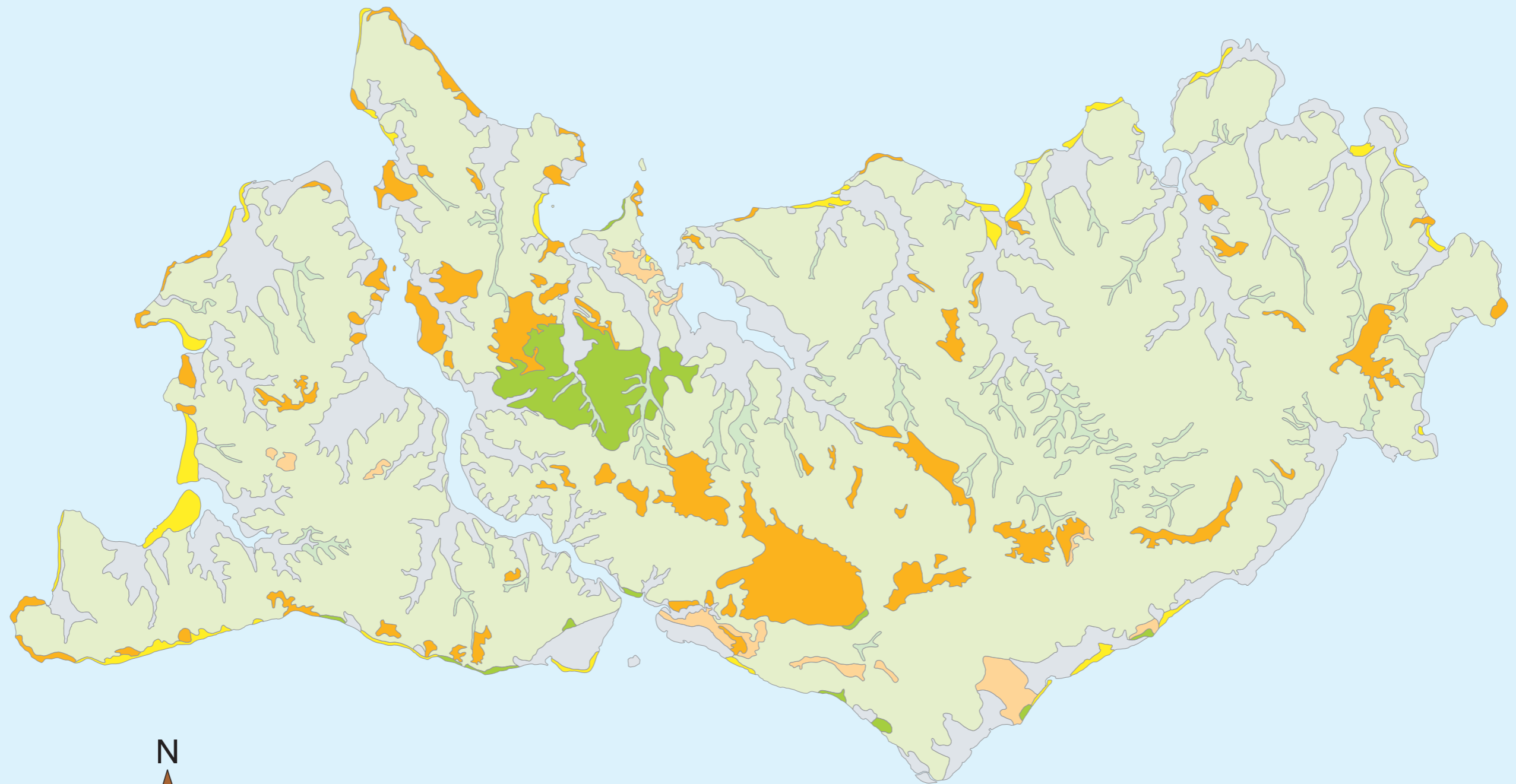
Annual Rainfall

- 1200-1400mm
- 1400-1600mm
- 1600-1800mm
- 1800-2000mm

Map 4 - Rainfall for the Tiwi Islands

Source: Northern Territory Parks and Wildlife Service





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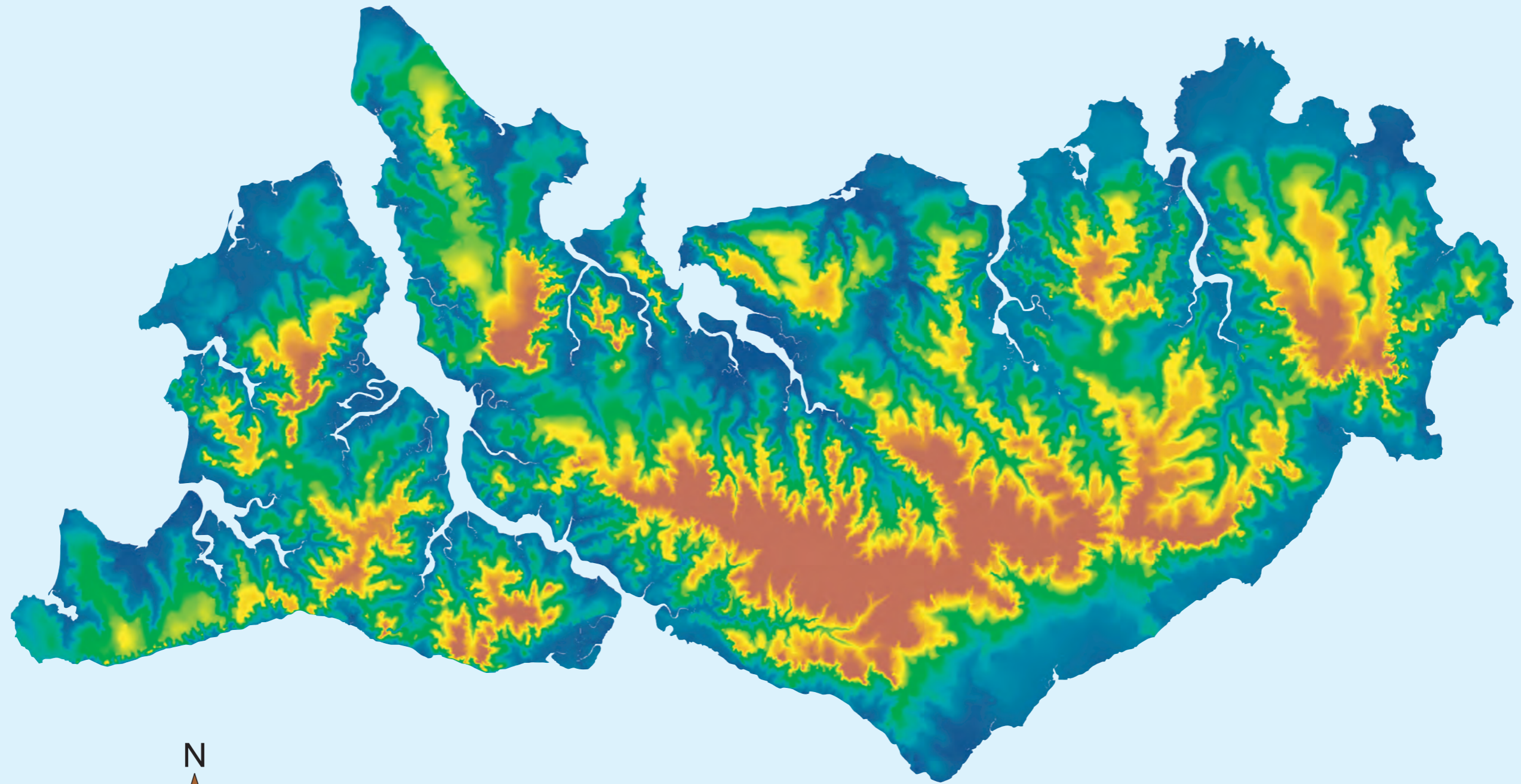
GEOLOGY

- Silt, fine sand, minor gravel: alluvium
- Quartzose sand, shell and coralline debris
- Saliferous organic mud and silt
- Red sandy soils and grey to yellow sandy soils
- Ferruginous to bauxitic pisolitic laterite
- Van Diemen Sandstone
- Moonkinu Member sandstone

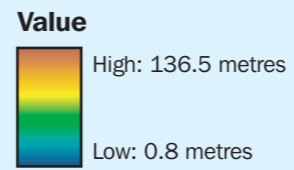
Map 5 - Geology of the Tiwi Islands

Source: Northern Territory Parks and Wildlife Service





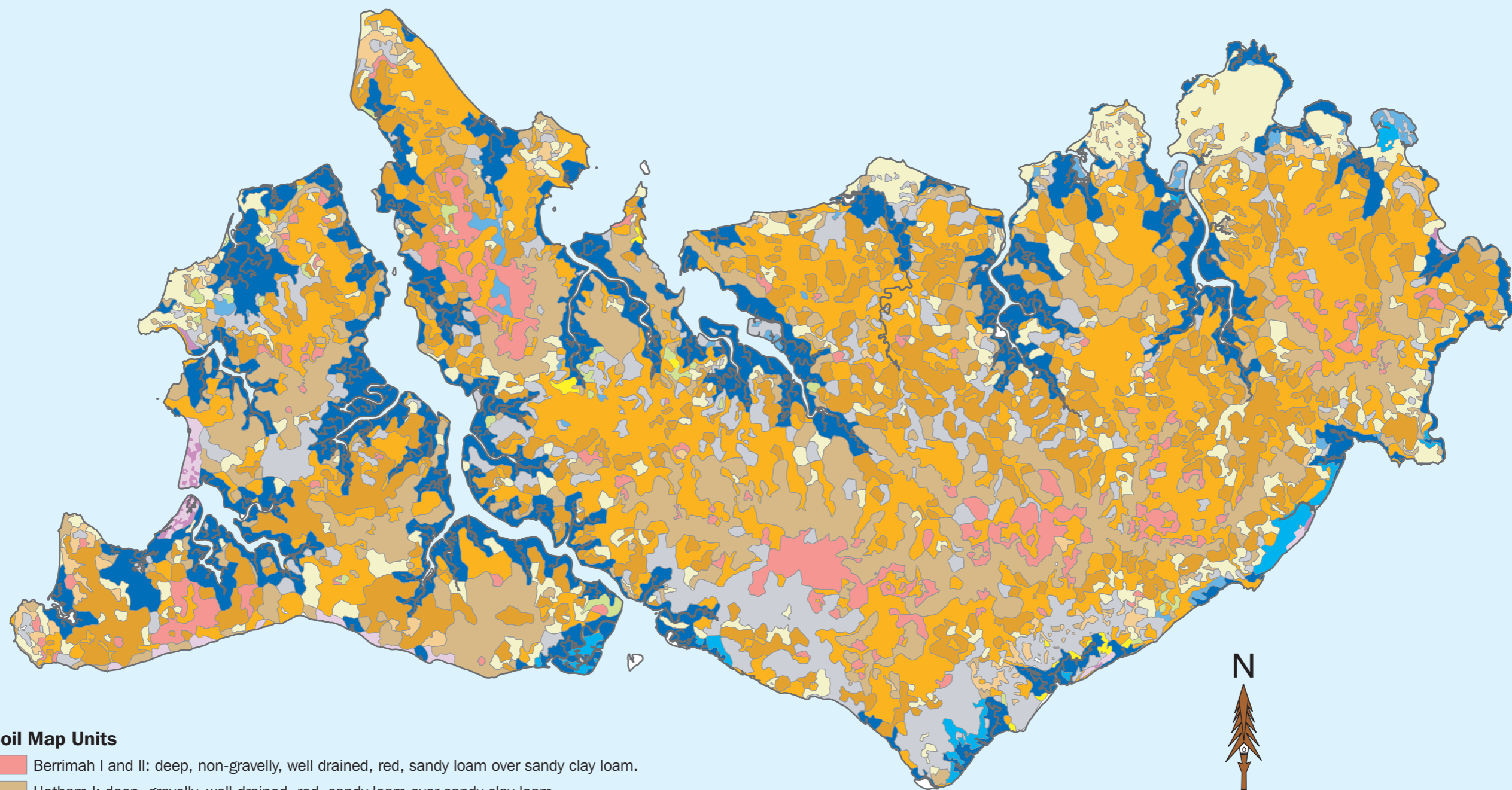
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Map 6 - Elevation of Tiwi Islands

Source: Land Capability Study of the Tiwi Islands (2003), Ian Hollingsworth, EWL Sciences Pty Ltd



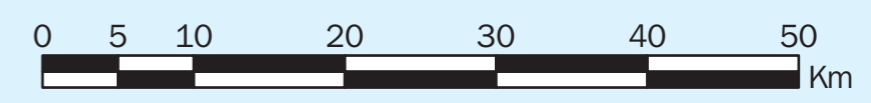


Soil Map Units

- Berrimah I and II: deep, non-gravelly, well drained, red, sandy loam over sandy clay loam.
- Hotham I: deep, gravelly, well drained, red, sandy loam over sandy clay loam.
- Hotham II and Irgul: shallow, gravelly, well drained, red, sandy loam over sandy clay loam.
- Killuppa: deep, non-gravelly, well drained, red loamy sand over sandy clay loam.
- Ramil: deep, non-gravelly, imperfectly drained, loamy sand over sandy clay loam.
- Koolpinyah: deep, gravelly, imperfectly drained, yellow sandy loam over sandy clay loam.
- Cockatoo, (minor Arnhem): deep, non-gravelly, well drained, red (minor yellow) sandy soils.
- Marrakai: deep, non-gravelly, poorly drained, sandy loam, over light clay.
- Mirrikau: deep, gravelly, poorly drained, sandy loam, over acidic, heavy clay.
- Murrabibby: deep, non-gravelly, poorly drained, sandy loam, over sandy clay loam.
- Euro: deep, non-gravelly, poorly drained, marine mud, formed in tidal swamps.
- Maand: deep, non-gravelly, poorly drained, marine mud, formed on tidal flats.
- Rinamatta: deep, non-gravelly, well drained, siliceous sand formed in eolian sand dunes.
- Wangiti: deep, non-gravelly, poorly drained, organic sand formed in dune swales.
- Mullalgah (not mapped): shallow, non-gravelly, poorly drained, black, peaty organic soils.



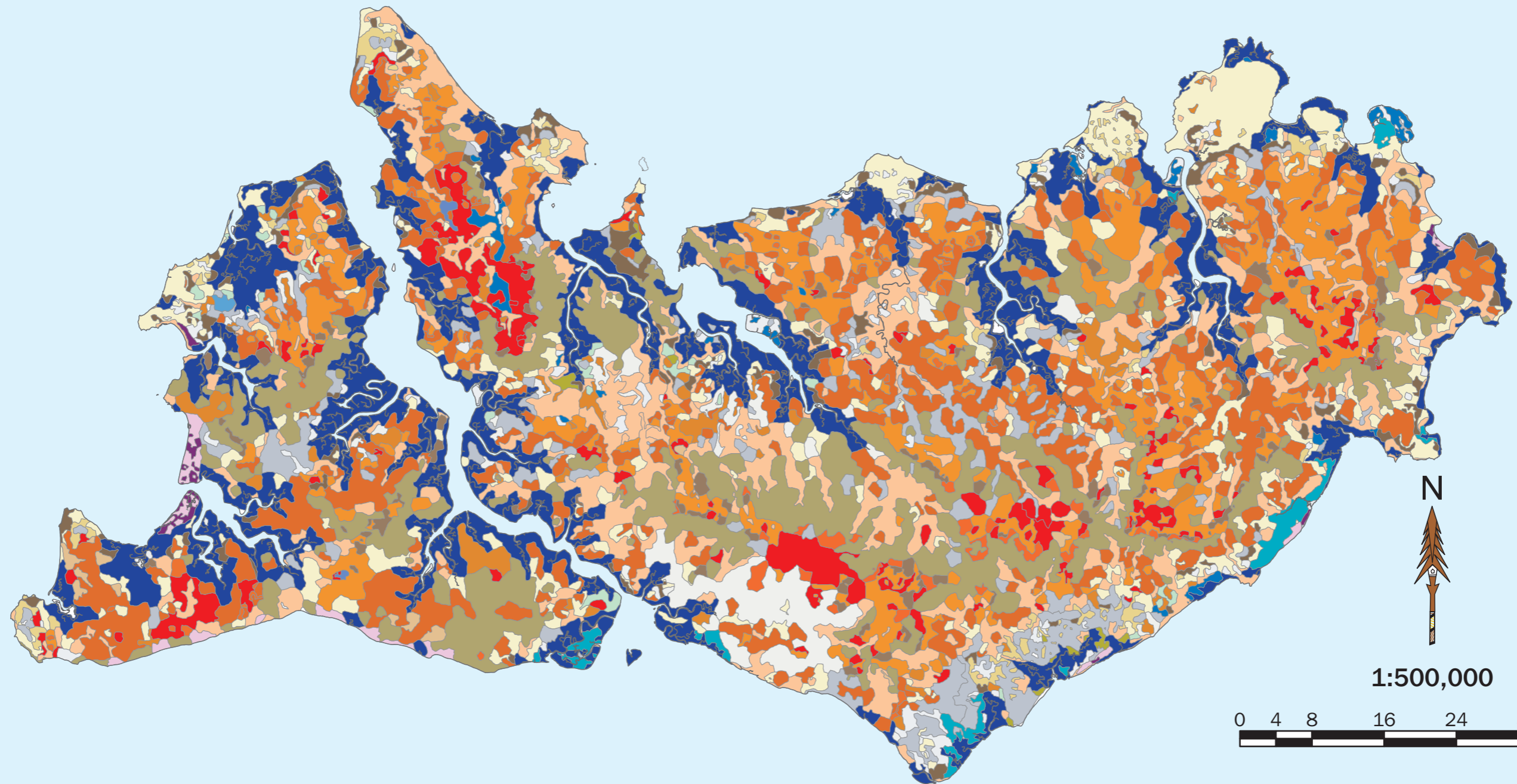
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Map 7 - Soils of the Tiwi Islands

Source: Land Capability Study of the Tiwi Islands (2003), Ian Hollingsworth, EWL Sciences Pty Ltd





Land Units

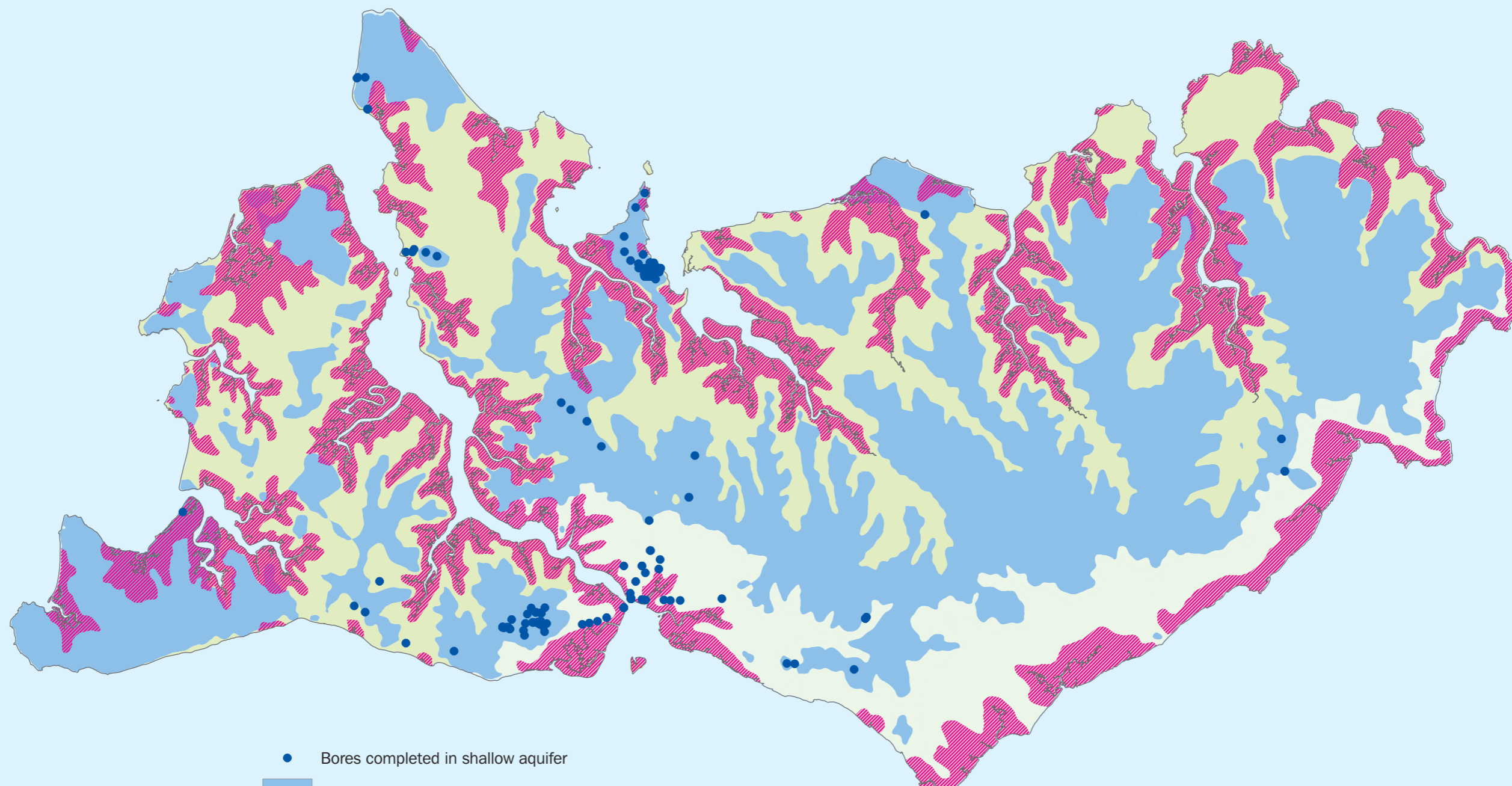
- Gaq086 Plateau; very deep Red Kandosols; *E. miniata* & *E. tetradonta* open forest/woodland.
- Laq086 Plateau; very deep Red Kandosols; *E. miniata* & *E. tetradonta* open forest/woodland.
- Lfc087 Plateau; very deep Red Kandosols; *E. miniata* & *E. tetradonta* open forest/woodland.
- Laq105 Plateau; very deep Red Kandosols; *E. miniata* & *E. tetradonta* open forest/woodland.
- Gec090 Rises; very deep Red Kandosols; *E. miniata* open forest.
- Gec088 Sandplain; very deep Red Kandosols; *E. miniata* & *E. tetradonta* open forest/woodland.
- Uec088 Rises; very deep Red Kandosols; *E. miniata* & *E. tetradonta* open forest/woodland.
- Lfc093 Sandplain; very deep Red Kandosols; *Grevillea pteridifolia* low open-woodland/tall shrubland.
- Gec091 Sandplain; very deep Brown and Yellow Kandosols; *E. miniata* open forest.
- Gaq085 Plateau; moderately deep to deep Red Kandosols; *E. miniata*, *E. tetradonta* & *E. nesophila* open-forest.
- Gfc085 Plain; moderately deep to deep Red Kandosols; *E. miniata*, *E. tetradonta* & *E. nesophila* open-forest.
- Udf085 Rises; moderately deep to deep Red Kandosols; *E. miniata*, *E. tetradonta* & *E. nesophila* open-forest.
- Uef085 Rises; moderately deep to deep Red Kandosols; *E. miniata*, *E. tetradonta* & *E. nesophila* open-forest.
- Uaf100 Plateau; shallow to moderately deep Brown Kandosols; *E. bleeseri* & *E. tetradonta* open forest/woodland.
- Lff112 Plain; shallow Red Kandosols; Low *Acacia difficilis* & *Terminalia ferdinandiana* open-woodland.
- Gec084 Plain; deep Brown Kandosols; *E. miniata*, *E. tetradonta* & *E. nesophila* open-forest.
- Gel117 (not mapped) Drainage lines; shallow, poorly drained, black, peaty organic soils; 'Wet' monsoon forests.
- Lfc114 Plain; very deep Hydrosols; *Lophostemon lactiflorus* low woodland.

- Ueo107 Low hills & rises; deep Red Kandosols & Grey Kurosols; *E. oligantha*, *Erythrophleum chlorostachys* open forest/woodland.
- Gfo095 Plain; moderately deep Hydrosols; *Melaleuca viridiflora* and *M. nervosa* low open-woodland.
- Lfo095 Plain; very deep Hydrosols; *Melaleuca viridiflora* and *M. nervosa* low open-woodland.
- Gfo109 Plain; deep Red Kandosols, shallow Rudosols & very deep Hydrosols; *Banksia* low woodland.
- Lgl101 Plain; very deep Hydrosols; *Melaleuca viridiflora* and *M. cajuputi* open forest/woodland.
- Lfo109 Plain; very deep Hydrosols; *E. oligantha*, *Erythrophleum chlorostachys* open forest/woodland.
- Lsj113 Chenier plain; moderately deep Podosols & very deep Hydrosols; *Melaleuca viridiflora* woodland/low woodland.
- Usj098 Chenier plain; deep Podosols; *E. foelscheana* low open-forest.
- Lfl098 Rises; moderately deep to deep Hydrosols; Dense Sedgeland with isolated clumps of *Pandanus spiralis*.
- Lrm099 Tidal flat; deep Intertidal Hydrosols; *Bruguiera parviflora* closed forest.
- Lrm110 Tidal flat; deep Supratidal Hydrosols.
- Lfc116 Plain; very deep Hydrosols; *Acacia* open-shrub land.

Map 8 - Land Units of the Tiwi Islands

Source: Land Capability Study of the Tiwi Islands (2003), Ian Hollingsworth, EWL Sciences Pty Ltd





- Bores completed in shallow aquifer
- HOMELAND SUPPLY Moderate to high success rate
- SMALL HOMELAND SUPPLY Moderate success rate
- LITTLE CHANCE OF WATER Low success rate
- Areas where groundwater may be brackish due to the effects of salt water intrusion



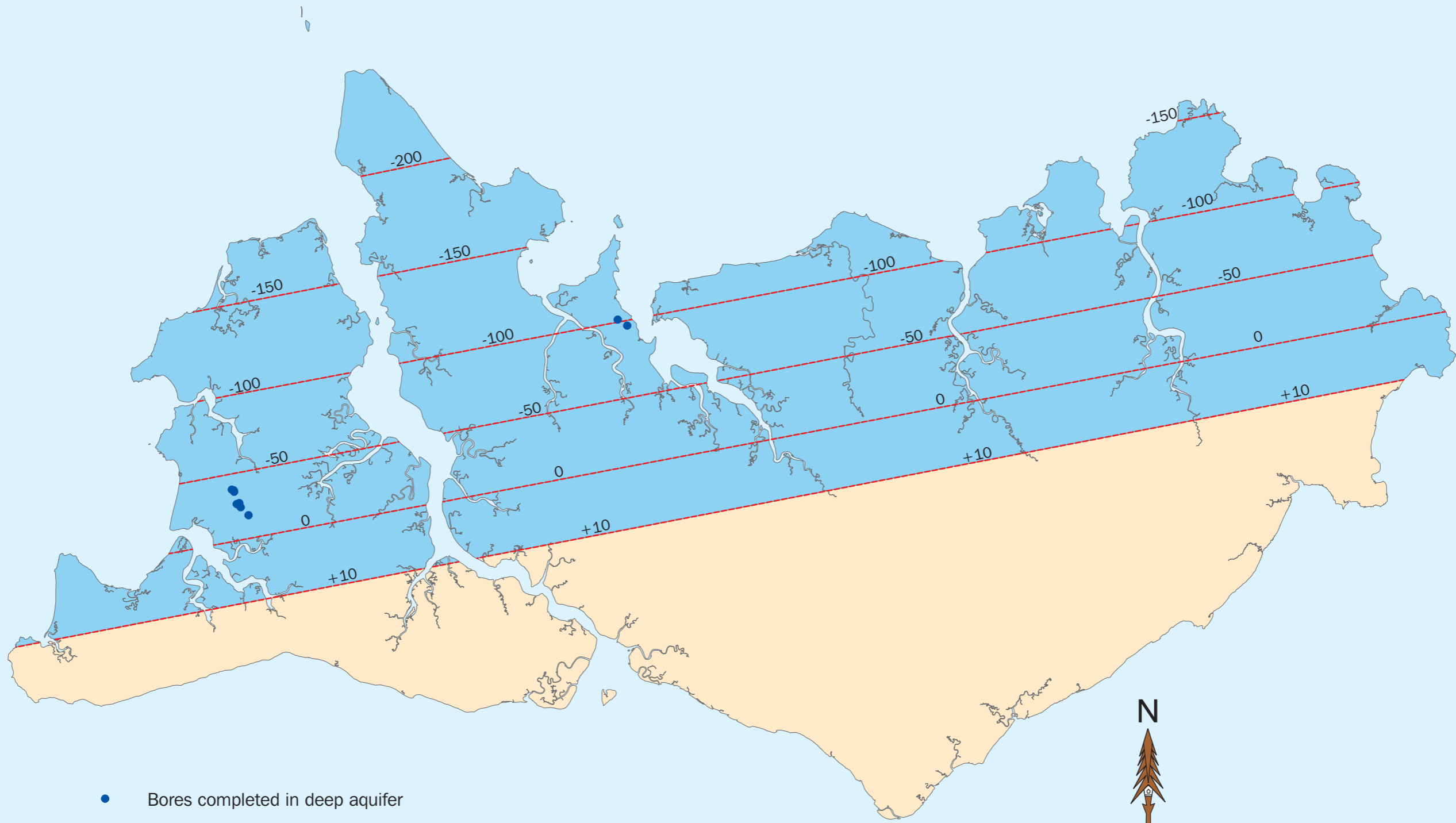
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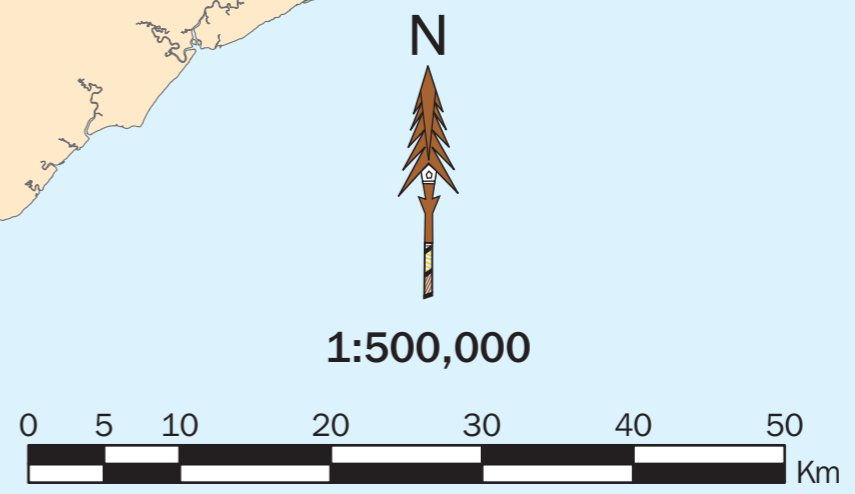
Map 9A - Groundwater - Shallow Unconfined Aquifer Potential

Source : Tiwi Islands Water Study (2003) Haig,T, Knapton, A and Matsuyama, A.
 Natural Systems Division, Department of Infrastructure, Planning and Environment.



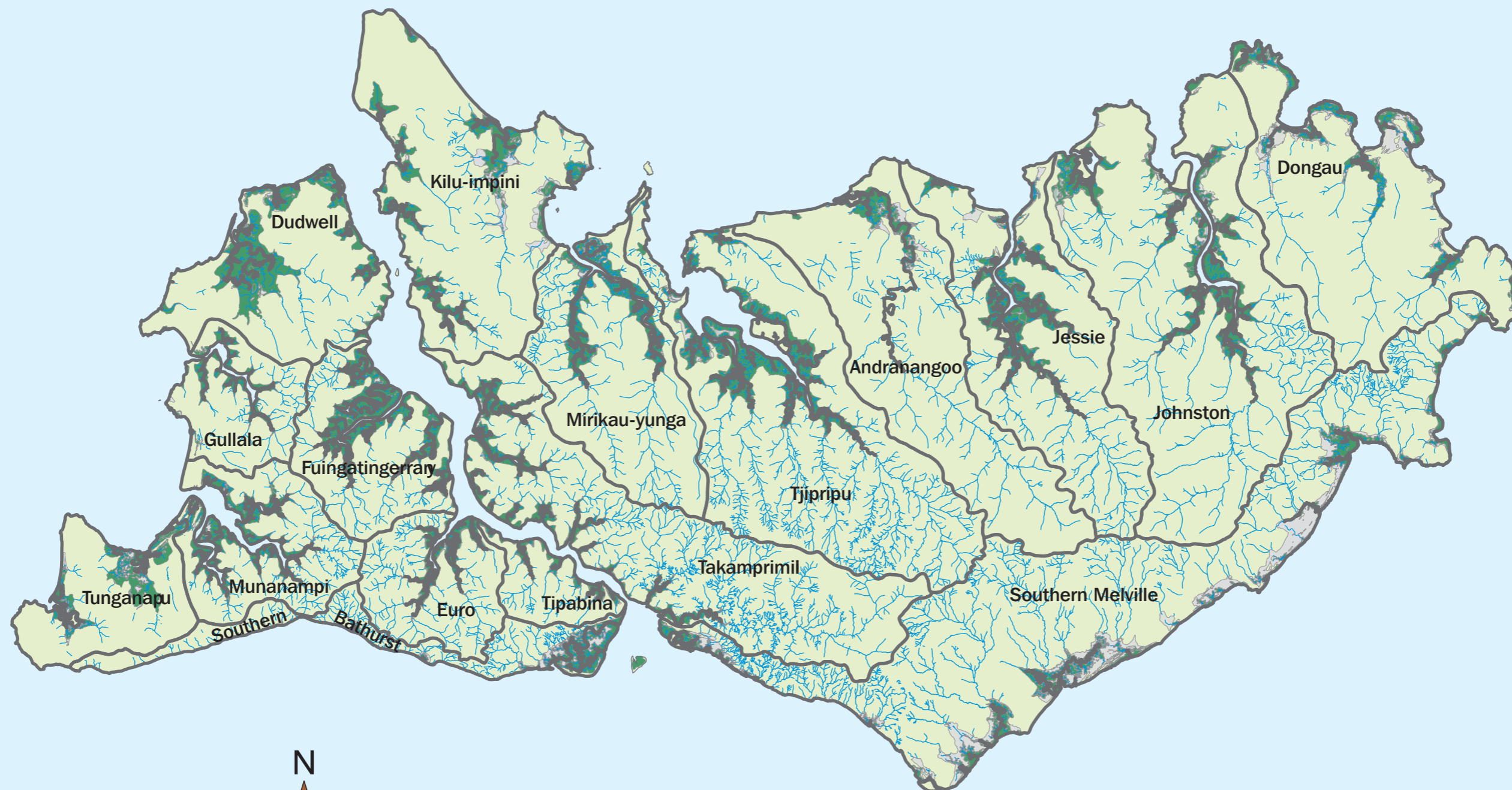


- Bores completed in deep aquifer
- Elevation (metres AHD) of the top of the sandstone aquifer
- GOOD CHANCE OF WATER**
Potential for obtaining water from deep confined sandstone aquifer. Water quality may be brackish near the coast and tidal creeks
- NO CHANCE OF WATER**
No potential for obtaining water from deep confined sandstone aquifer

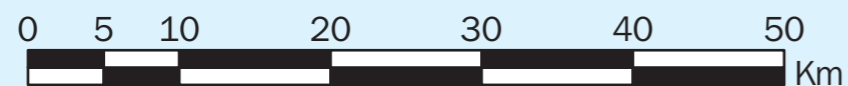


Map 9B - Groundwater - Deep Confined Aquifer Potential

Source : Tiwi Islands Water Study (2003) Haig,T., Knapton, A and Matsuyama, A.
Natural Systems Division, Department of Infrastructure, Planning and Environment.

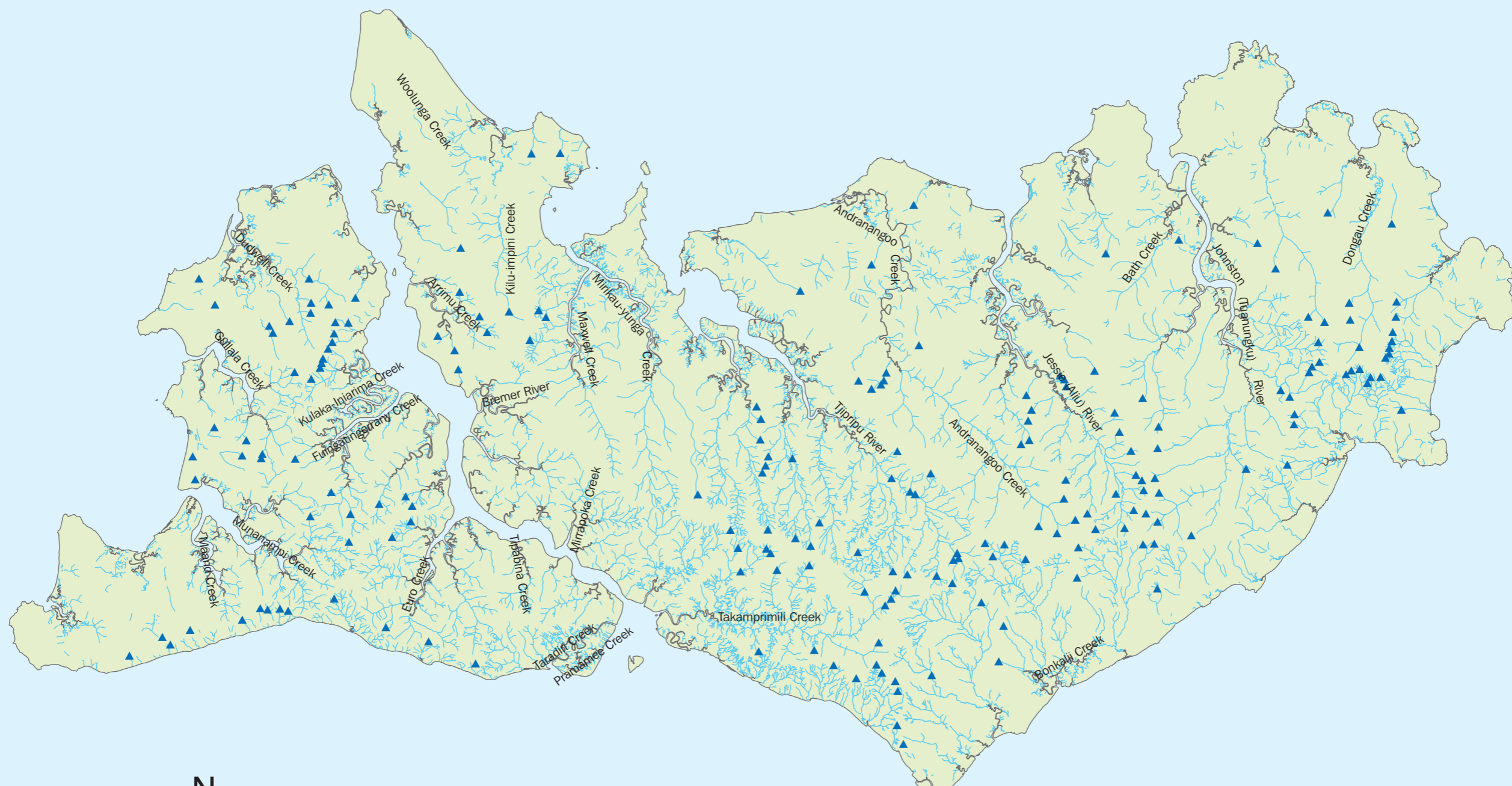


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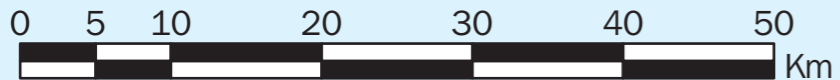
Map 10A - Surface Water - Major Catchments





▲ Spring

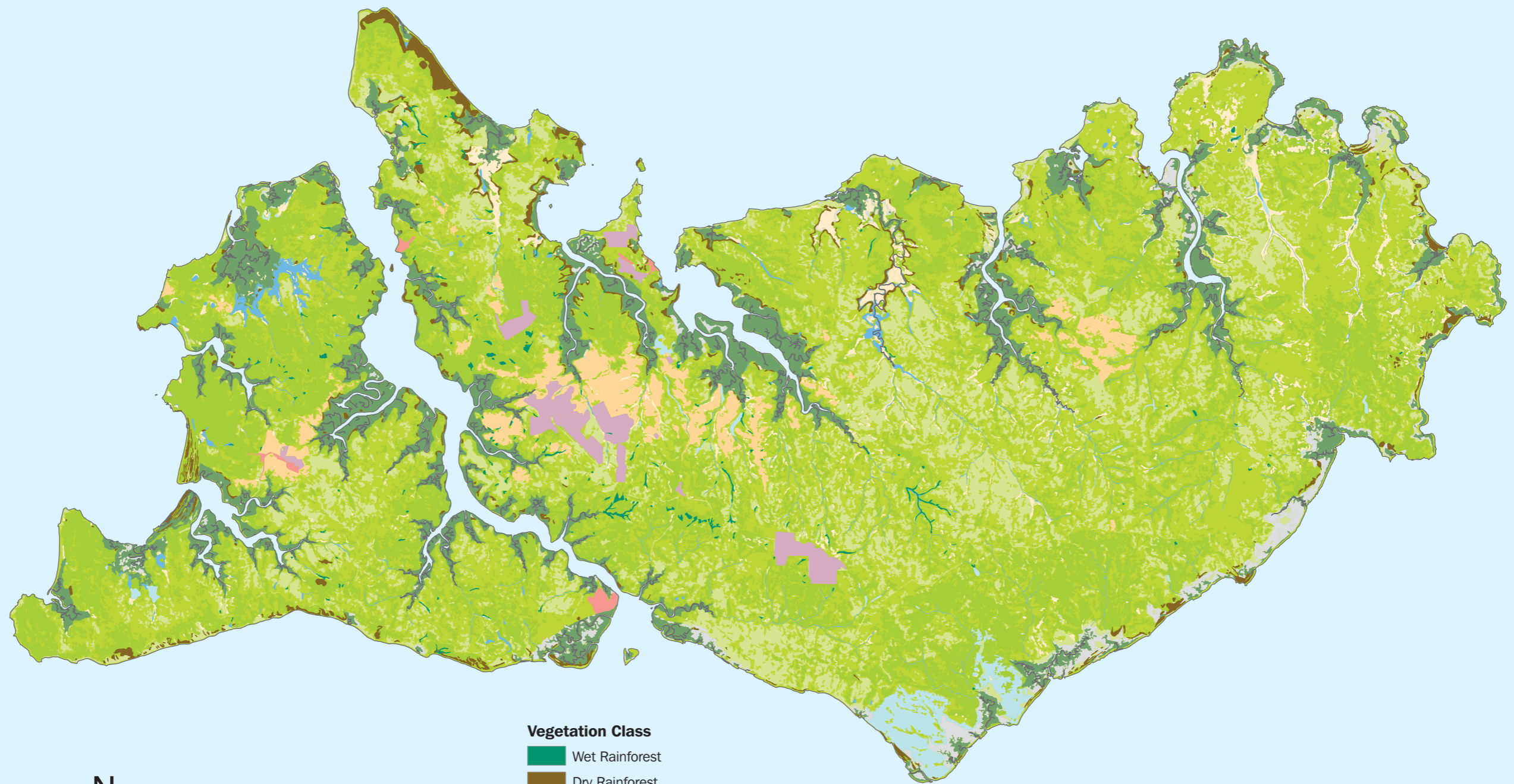
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Map 10B - Surface Water and Springs

Source: Tiwi Islands Water Study (2003) Haig,T., Knapton, A and Matsuyama, A. Natural Systems Division, Department of Infrastructure, Planning and Environment.





Vegetation Class

- Wet Rainforest
- Dry Rainforest
- Mangroves
- Sand & salt flats
- Sedgeland & grasslands
- Melaleuca open forests
- Melaleuca low woodlands
- Treeless plains
- Eucalypt forest (dense)
- Eucalypt forest (open)
- Eucalypt woodland
- Plantations
- Built-up area



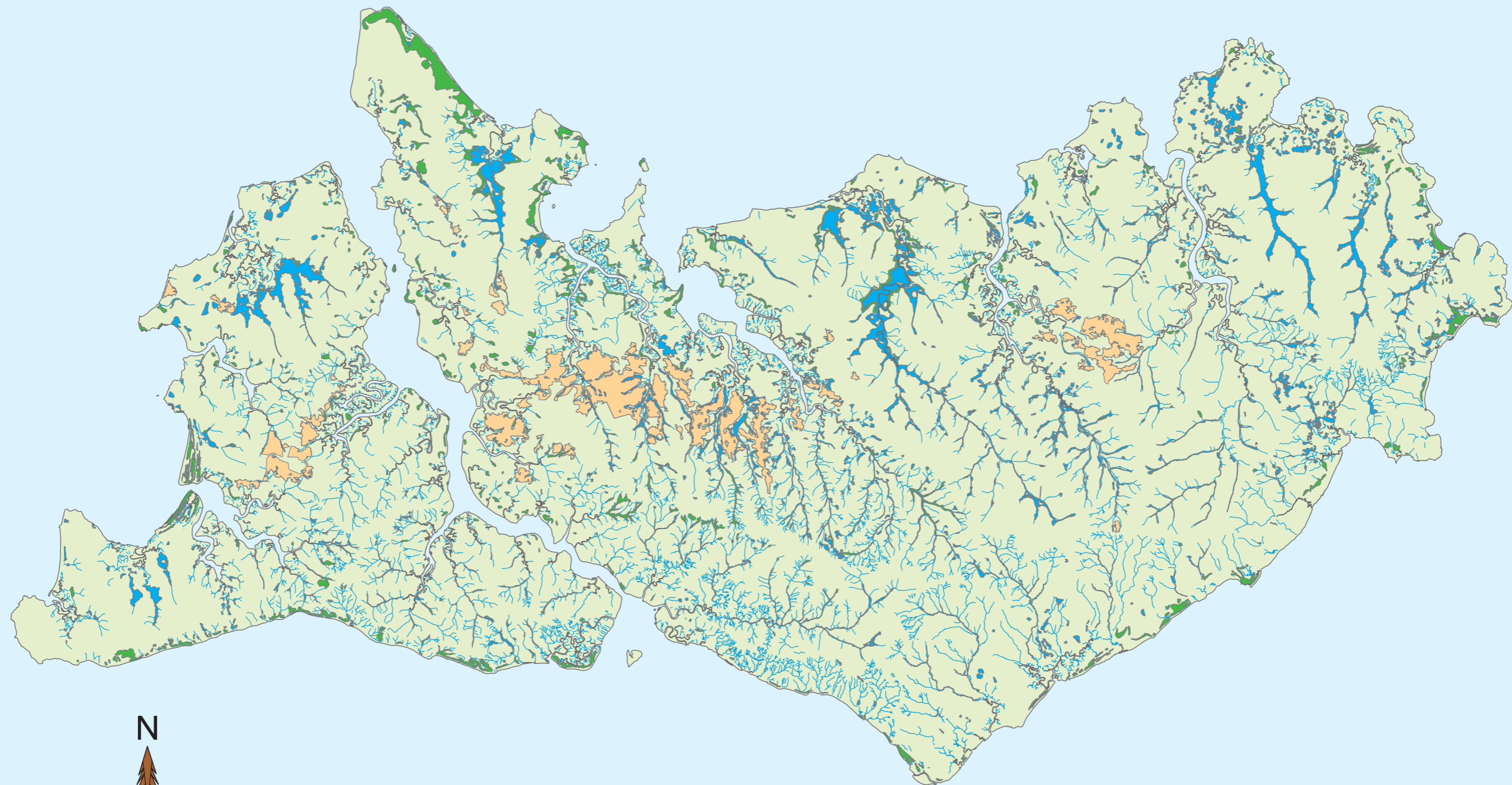
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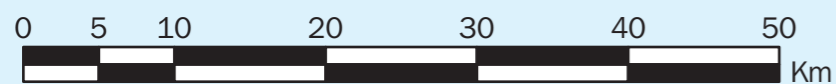
Map 11 - Vegetation of the Tiwi Islands

Source: Northern Territory Parks and Wildlife Service





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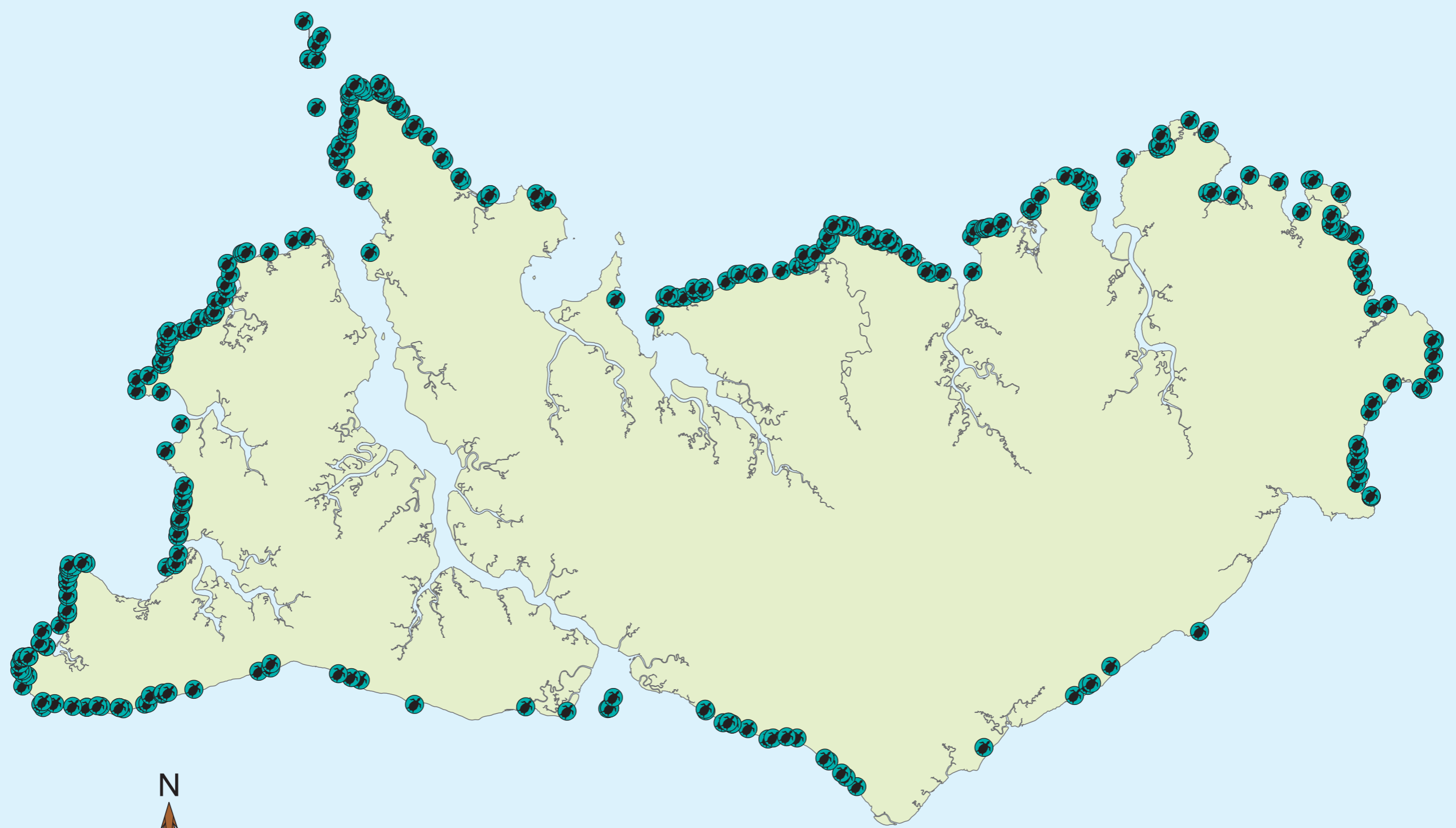


- Riparian zones and wetlands
- Treeless plains
- Wet and dry rainforest

Map 12 - Significant Vegetation for Conservation Value

Source: Northern Territory Parks and Wildlife Service





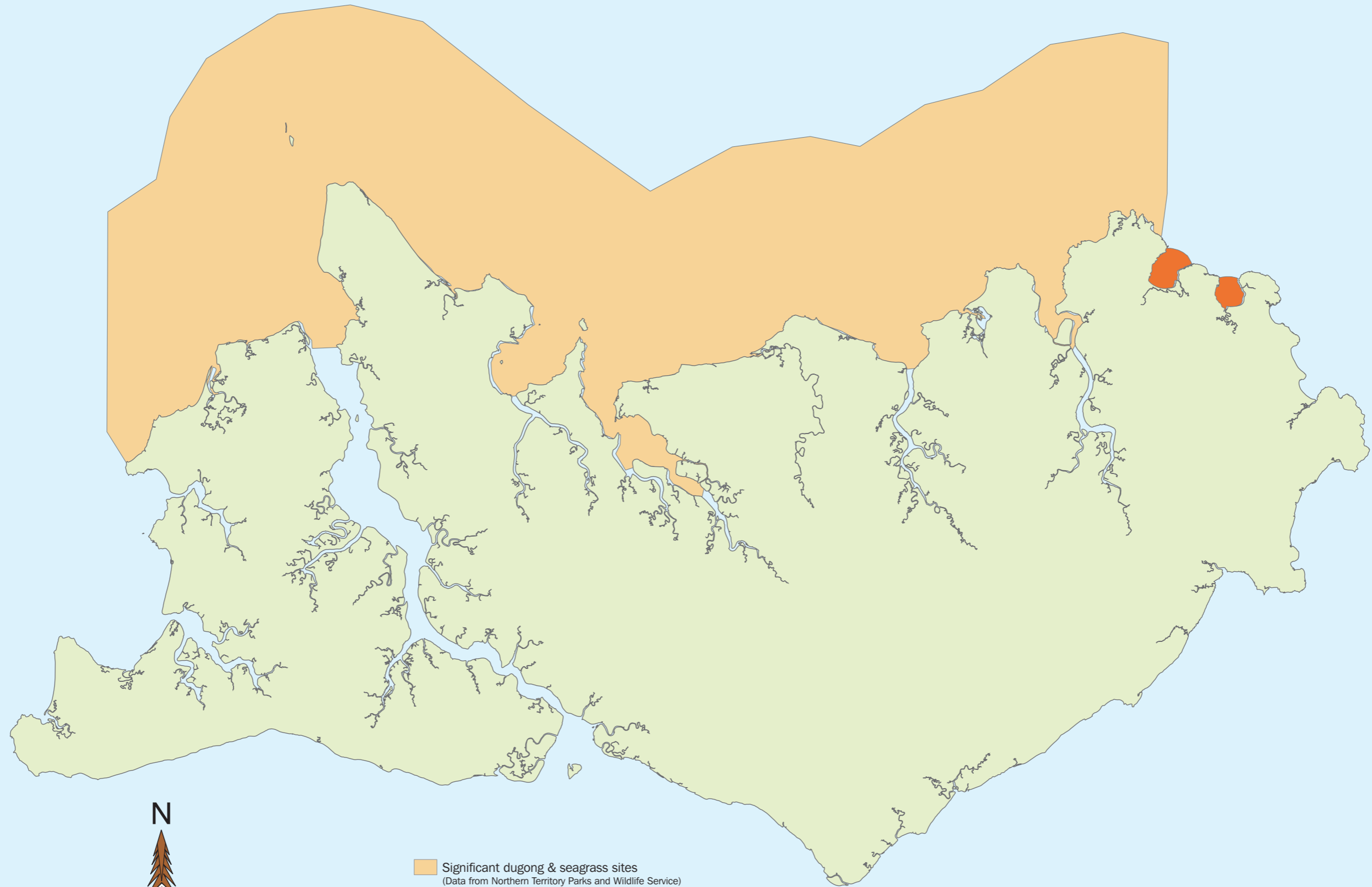
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Map 13 - Marine Turtle Locations and Breeding Sites

Source: Northern Territory Parks and Wildlife Service

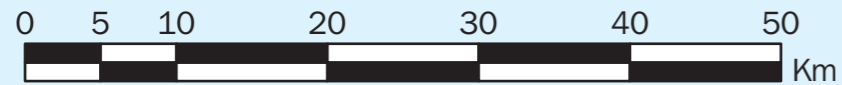




- Significant dugong & seagrass sites
(Data from Northern Territory Parks and Wildlife Service)
- Significant dugong sites
(Tiwi Knowledge)

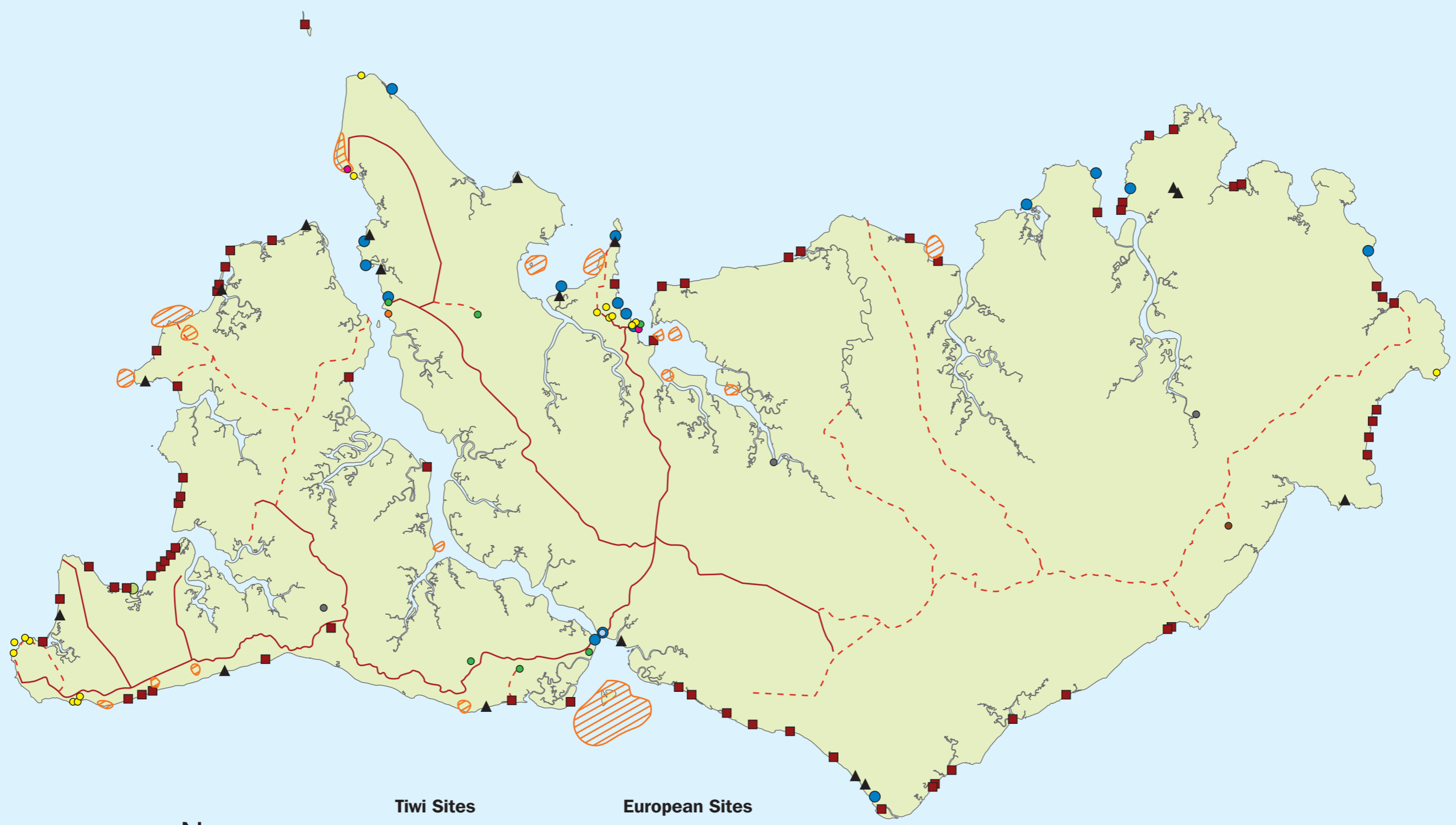


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Map 14 - Significant Sites for Dugong and Seagrass





Tiwi Sites

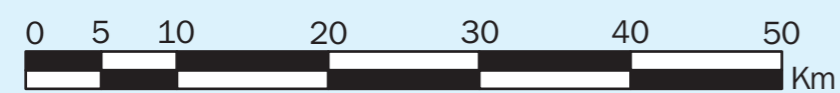
- Hunting Campsites
- ▲ Grave Sites
- Residential Sites
- Ceremonial Sites
- Imunga

European Sites

- Fort Dundas
- Joe Cooper
- Macassan
- Mission
- Post Mission
- Sawmills
- World War II



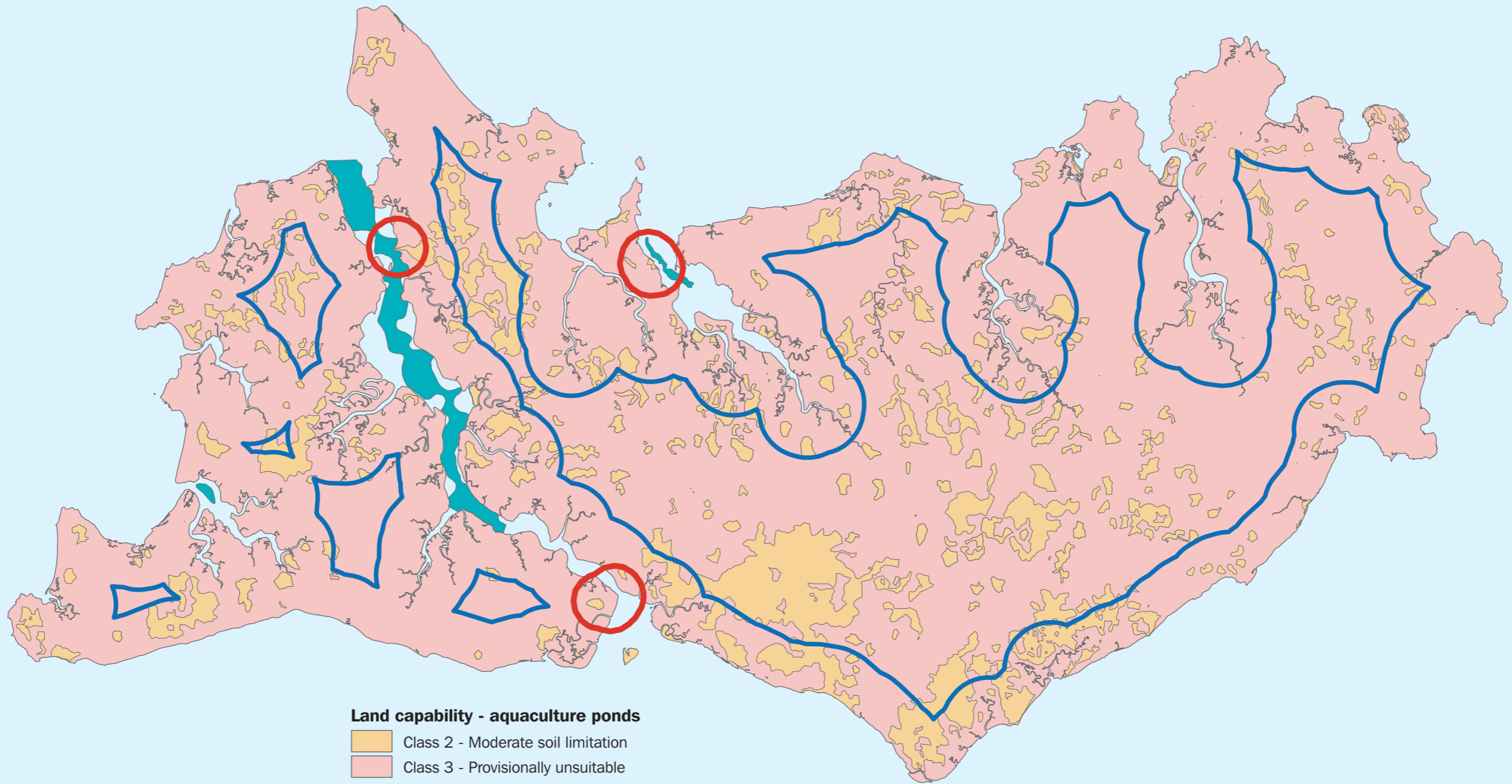
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Map 15 - Tiwi and European significant sites

Source: Bathgate, J., and Lewis, D., (1999). Nginaki Ngjirramini Ngini Tiwi Amintiya Mamurruntawi. This is a story about Tiwi and non-Tiwi. Report for National Trust (Northern Territory and the Tiwi Land Council).
 Davis, S., (1983). A report on the Bathurst and Melville Islands sea closure application. Report to the Tiwi Land Council.





Land capability - aquaculture ponds

- Class 2 - Moderate soil limitation
- Class 3 - Provisionally unsuitable

Waters suitable for sea cage aquaculture

- Depth >10m at lowest tide where waves should not exceed 3.5m

Community buffers

- 3 km buffers to negate risk of pollution

Coastline buffer

- 5 km buffer from coastline



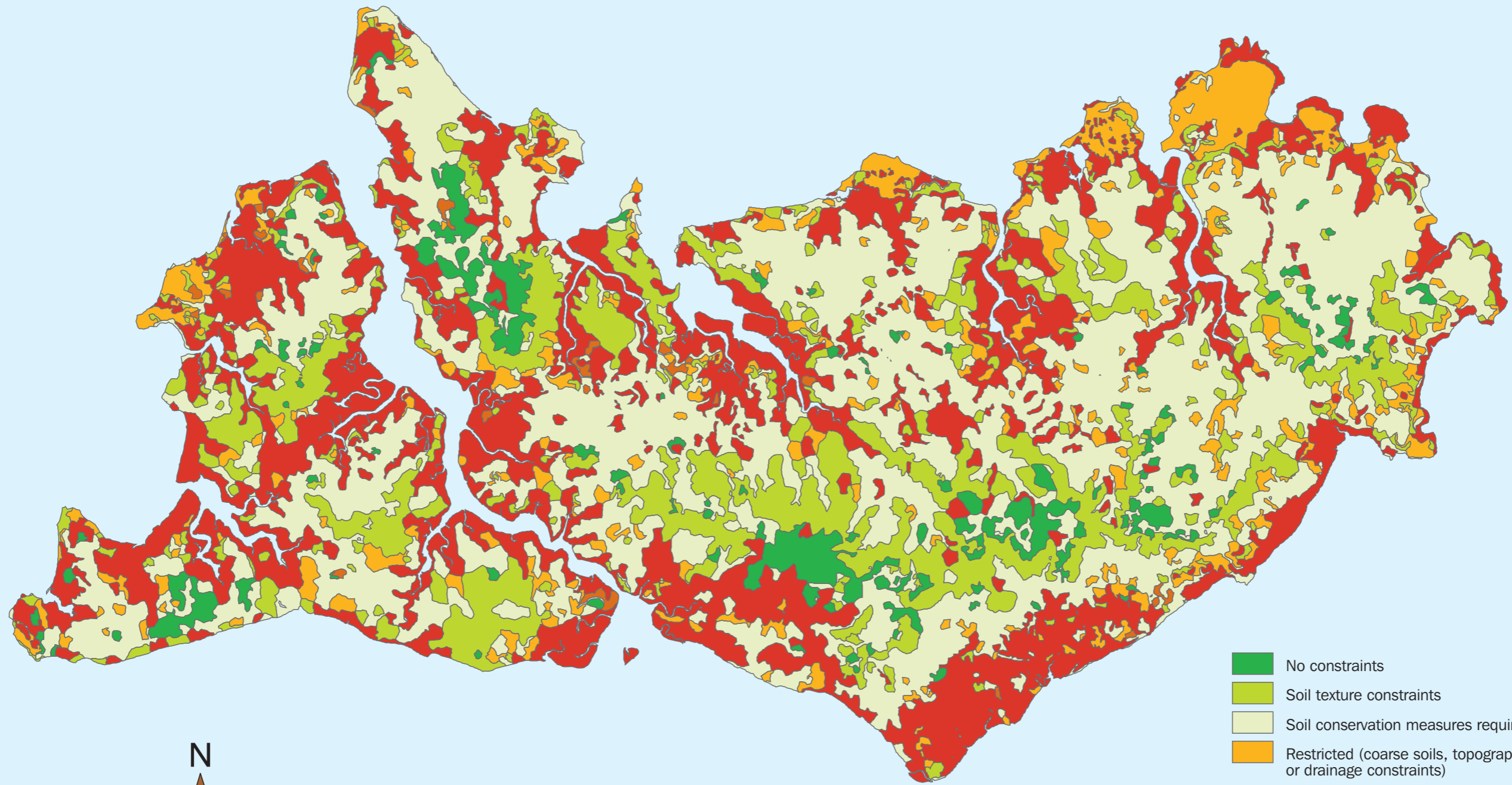
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Map 16 - Land Capability - Aquaculture

Source: Land Capability Study of the Tiwi Islands (2003), Ian Hollingsworth, EWL Sciences Pty Ltd
Tiwi Aquaculture GIS, AIRESEARCH Mapping Pty Ltd

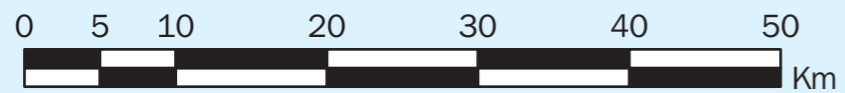




- No constraints
- Soil texture constraints
- Soil conservation measures required
- Restricted (coarse soils, topographic or drainage constraints)
- Provisionally unsuitable
- Unsuitable



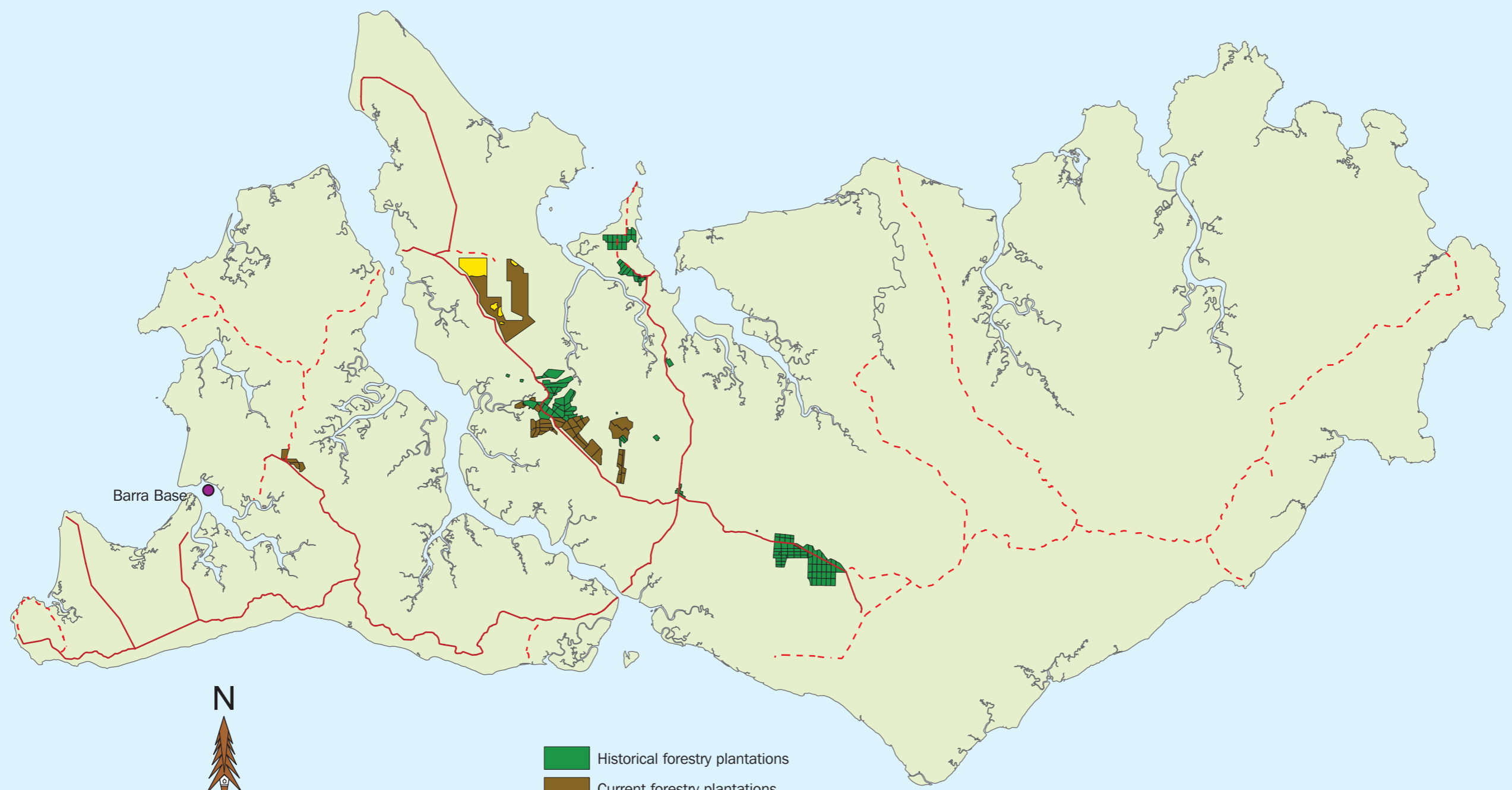
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Map 17 - Land Capability - Forestry

Source: Land Capability Study of the Tiwi Islands (2003), Ian Hollingsworth, EWL Sciences Pty Ltd





Barra Base



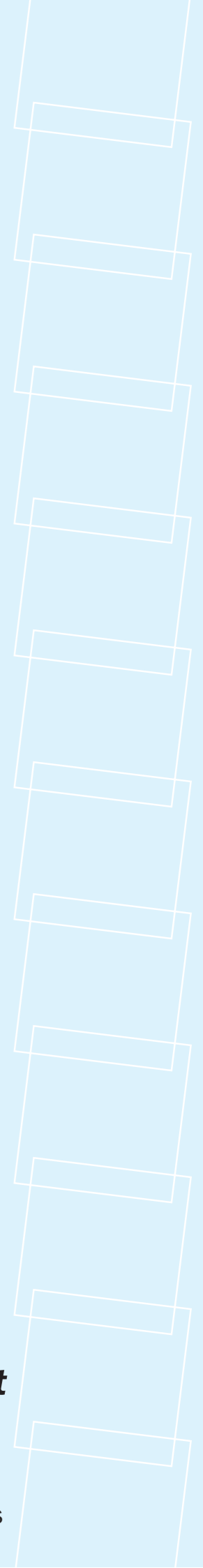
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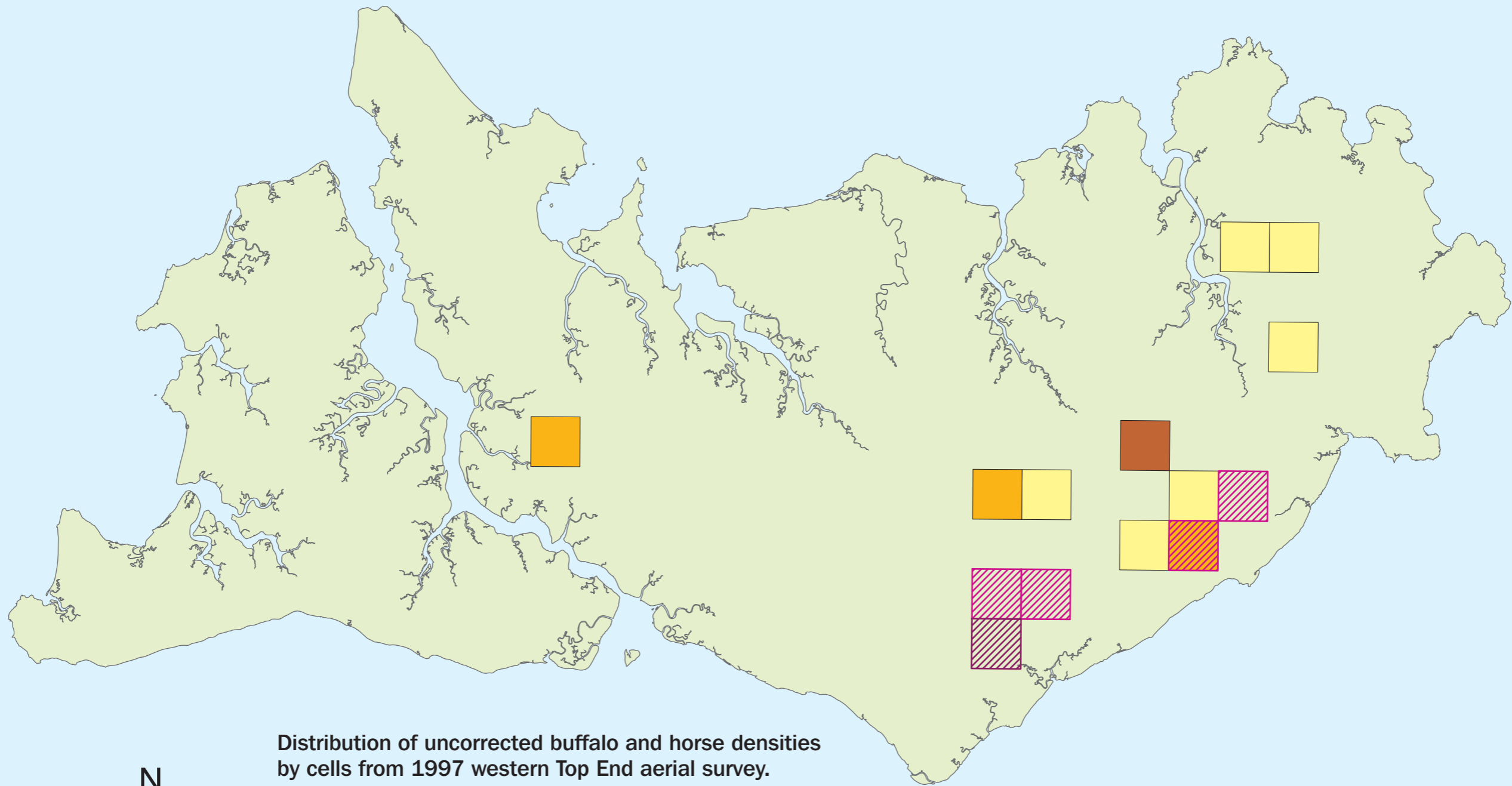


- Historical forestry plantations
- Current forestry plantations
- Conservation zones
- Sea cage aquaculture

Map 18 - Forestry and Aquaculture Development

Plantation lease boundary data from Sylvatech Australia Ltd





Distribution of uncorrected buffalo and horse densities by cells from 1997 western Top End aerial survey.

Number of animals per square km



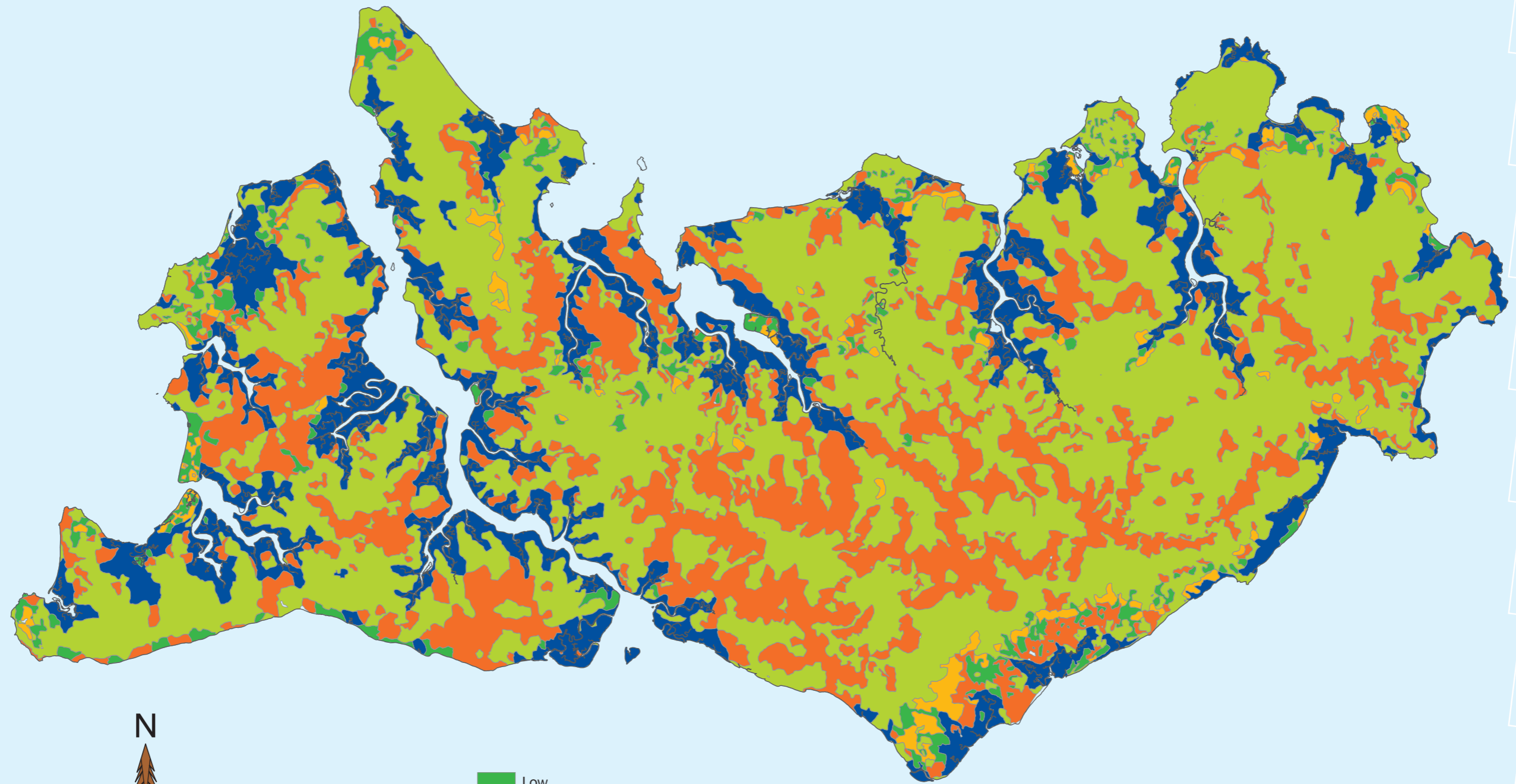
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Map 19 - Feral Horses and Buffalo

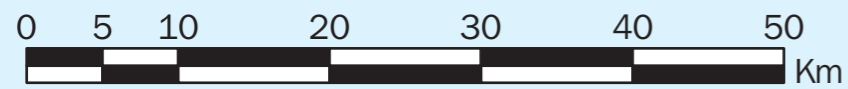
Source: WK Saalfeld, Northern Territory Parks and Wildlife Service





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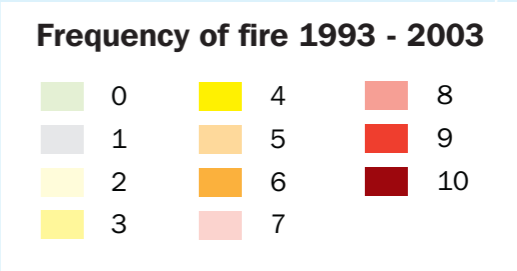
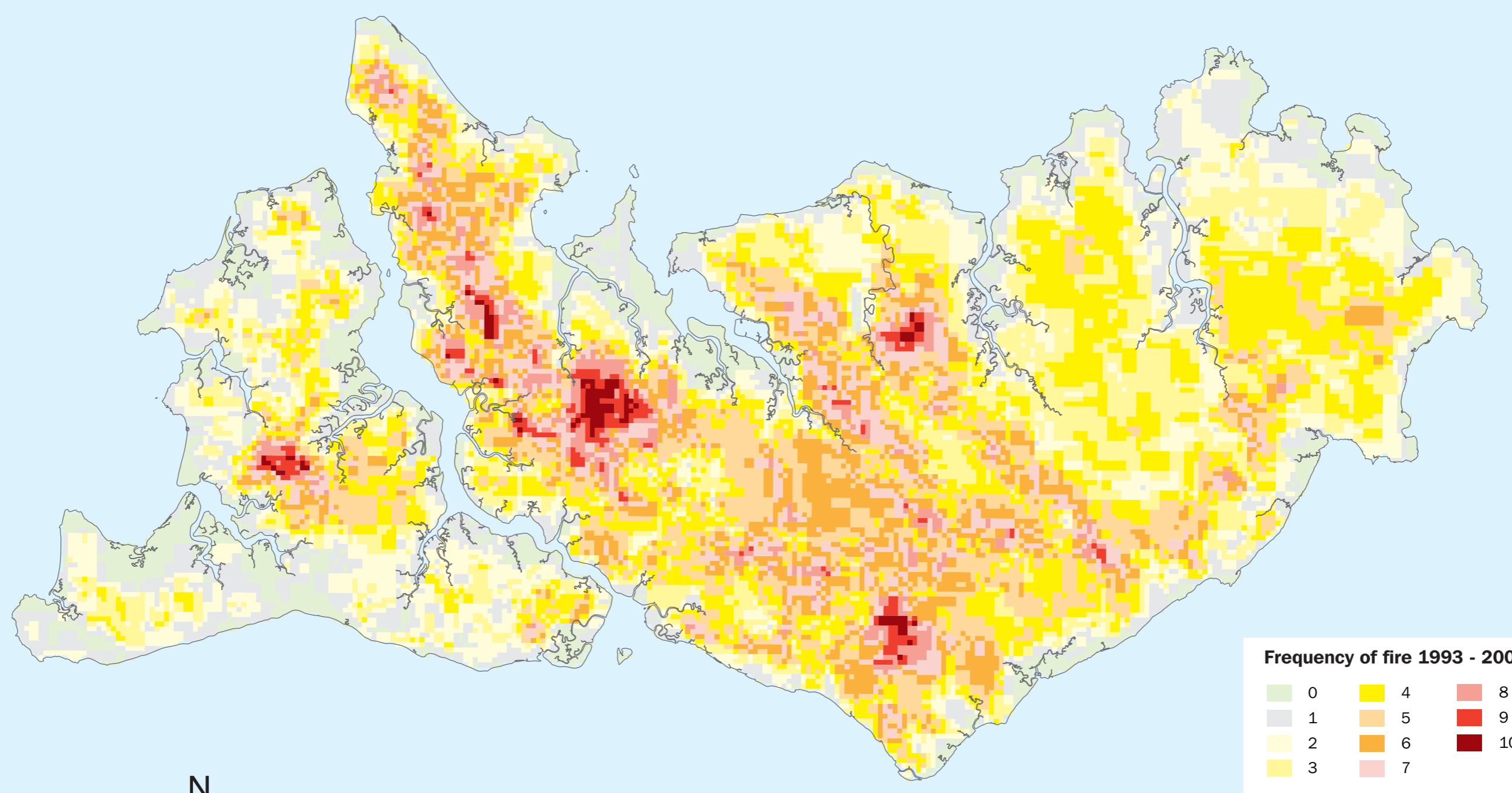
- Low
- Low to moderate
- Moderate
- Moderate to high
- Nil



Map 20 - Erosion Risk

Source: Land Capability Study of the Tiwi Islands (2003), Ian Hollingsworth, EWL Sciences Pty Ltd





1:500,000



Map 21 - Fire History of the Tiwi Islands

Source: Northern Territory Parks and Wildlife Service

