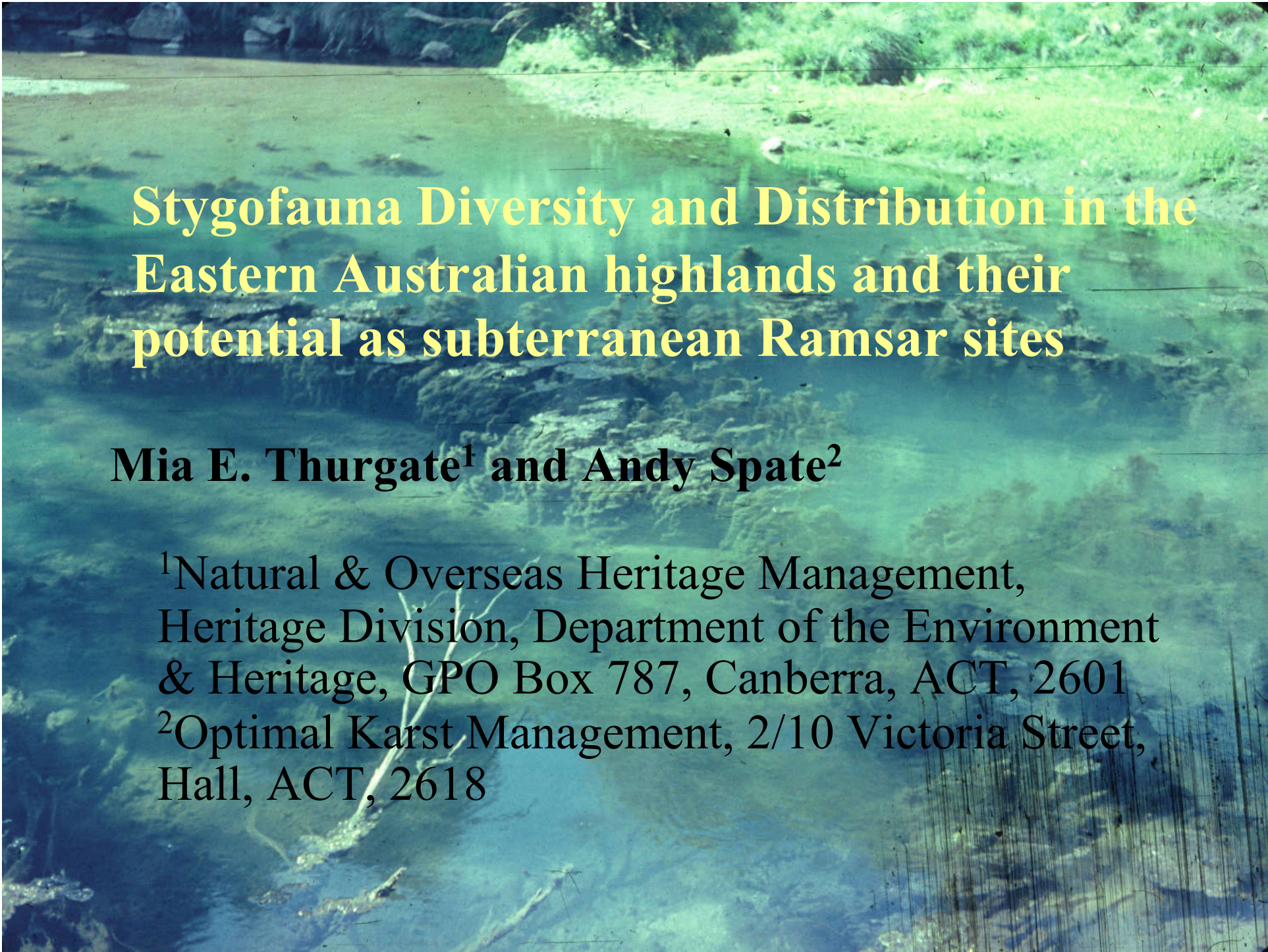




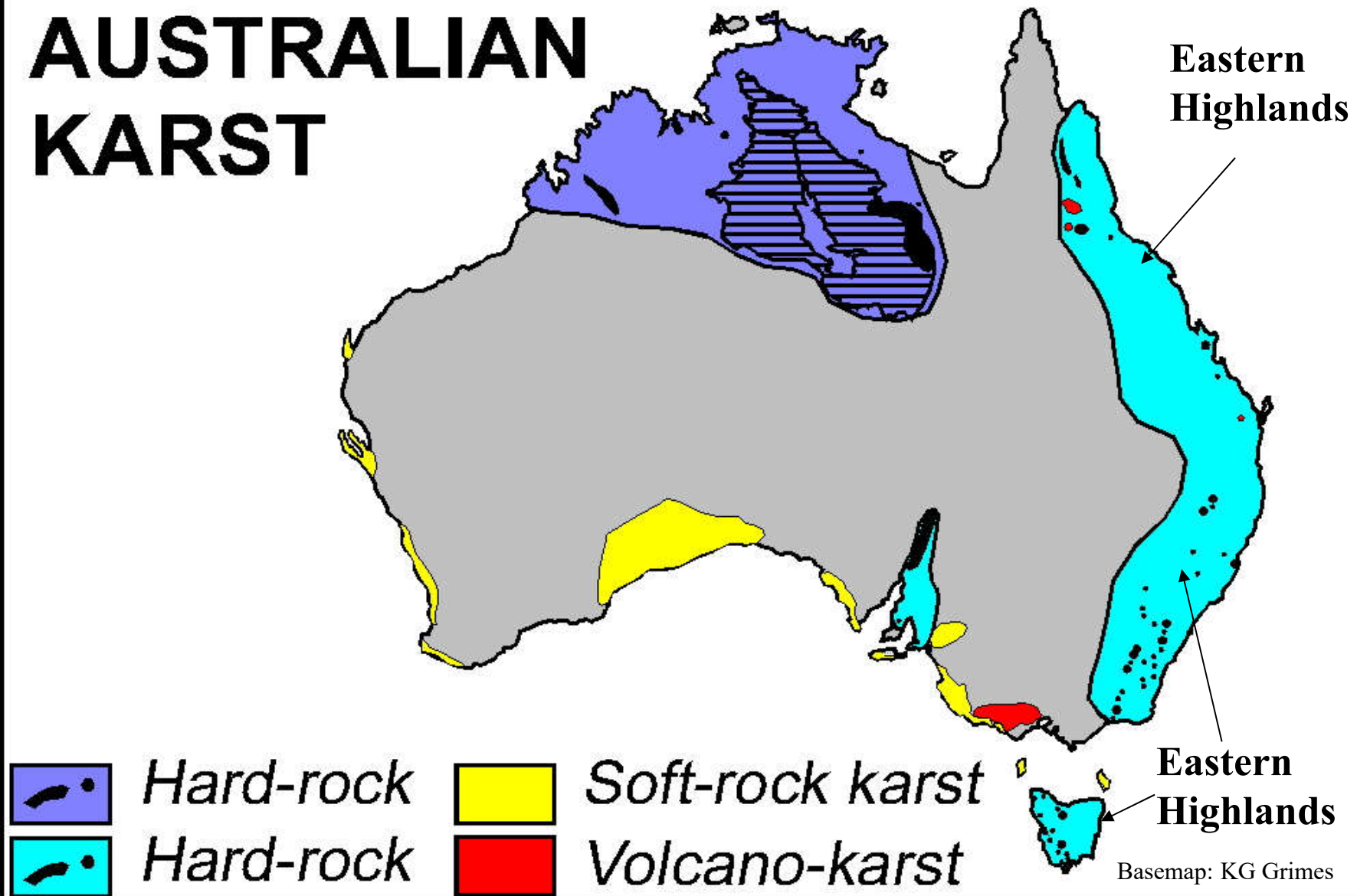
Stygofauna Diversity and Distribution in the Eastern Australian highlands and their potential as subterranean Ramsar sites

Mia E. Thurgate¹ and Andy Spate²

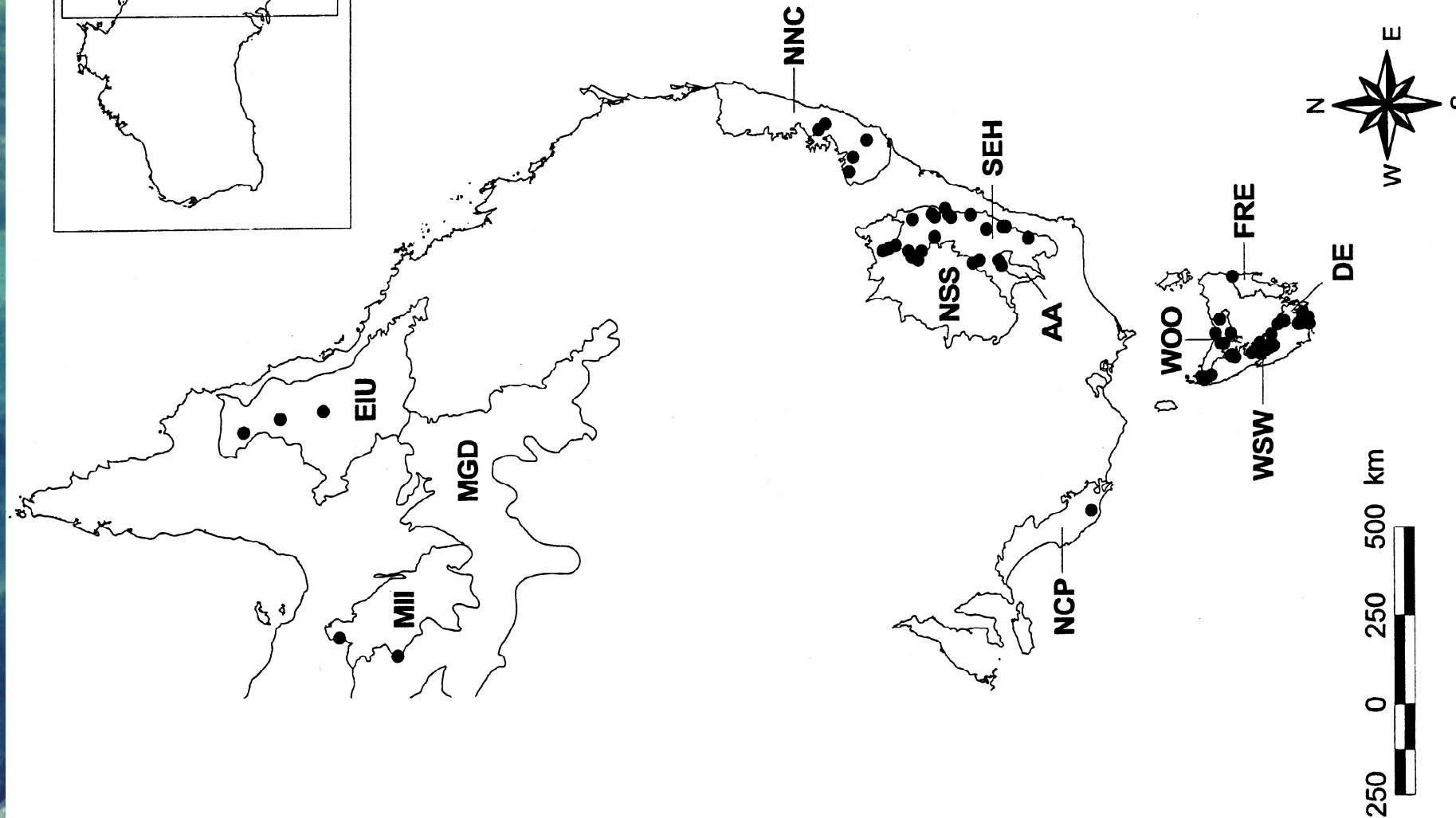
¹Natural & Overseas Heritage Management,
Heritage Division, Department of the Environment
& Heritage, GPO Box 787, Canberra, ACT, 2601

²Optimal Karst Management, 2/10 Victoria Street,
Hall, ACT, 2618

AUSTRALIAN KARST



Distribution of stygofauna sites in Eastern Australia (after Thurgate et al 2001).



QUEENSLAND

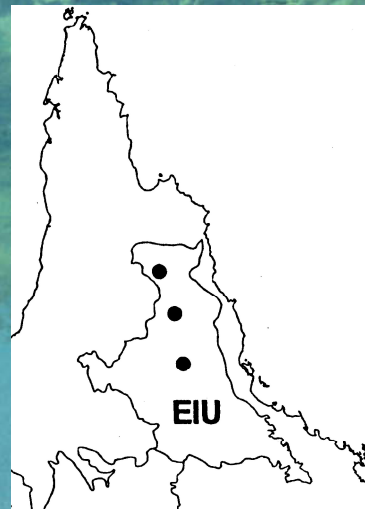
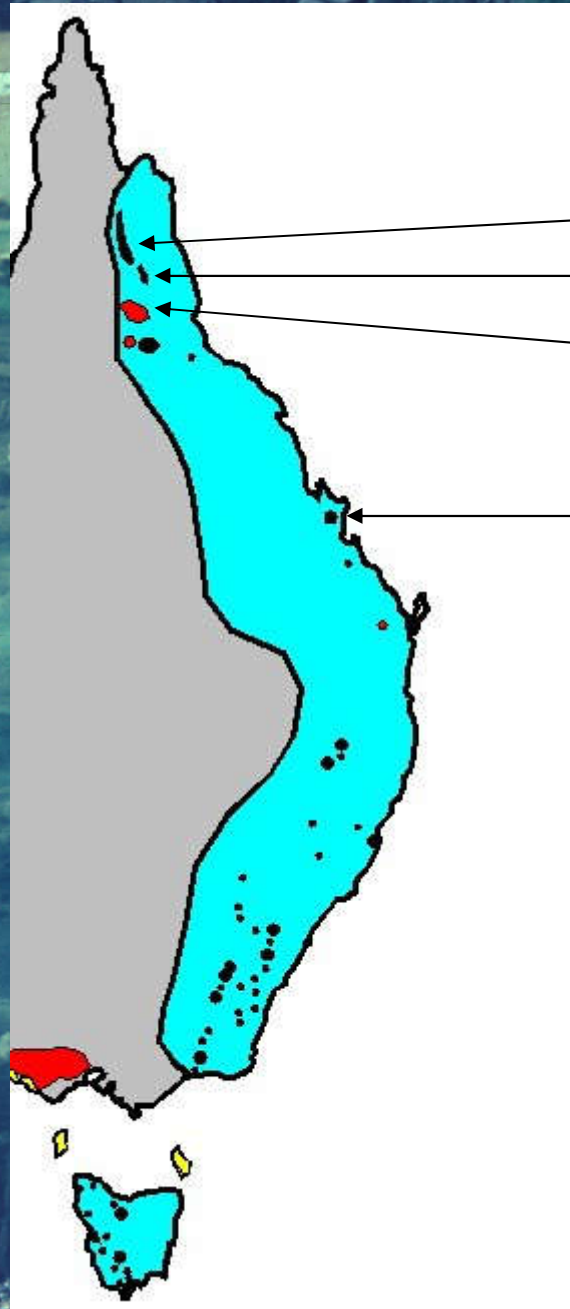
Mitchell-Palmer

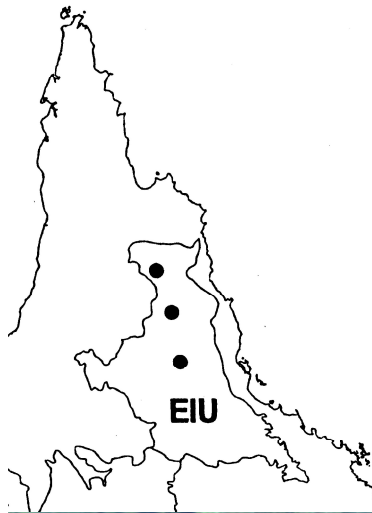
Chillagoe

Undara Lava Tubes

Mount Etna

Plenty of
potential...





QUEENSLAND

- Einasleigh Uplands (EIU)

Mitchell-Palmer

Chillagoe

Undara Lava Tubes

- Mount Etna region



137402-37A: 4E: Tufa Rimstone pools in creek to North

(c) KGG 1976

NEW SOUTH WALES

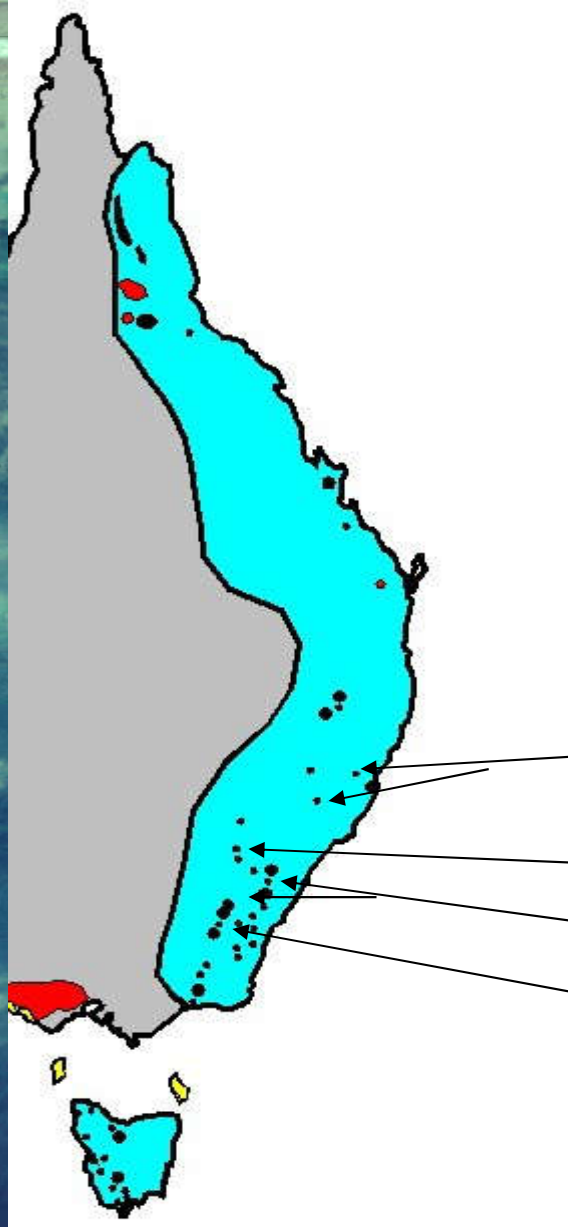
From Rags to
Riches...

North Coast + Upper Hunter

Wellington region

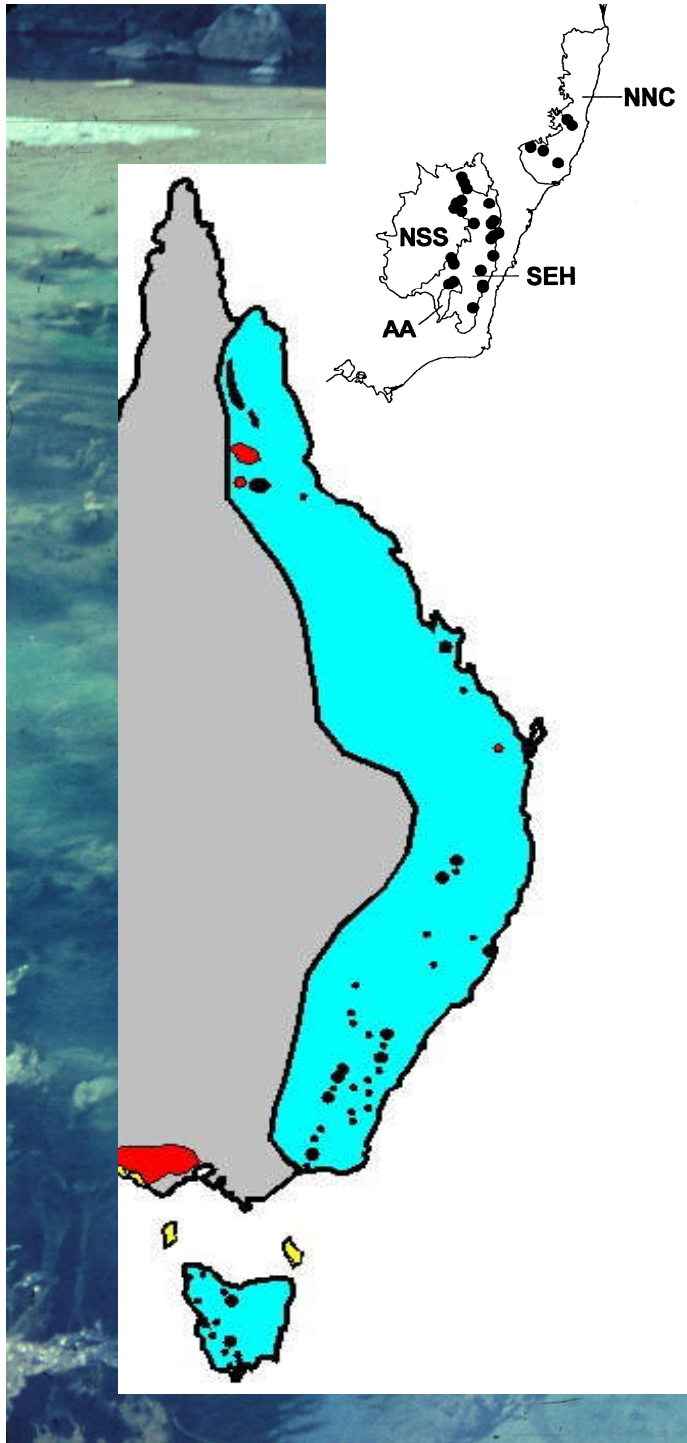
Jenolan – Wombeyan – Wee Jasper region

Coolleman Plains -Yarrangobilly



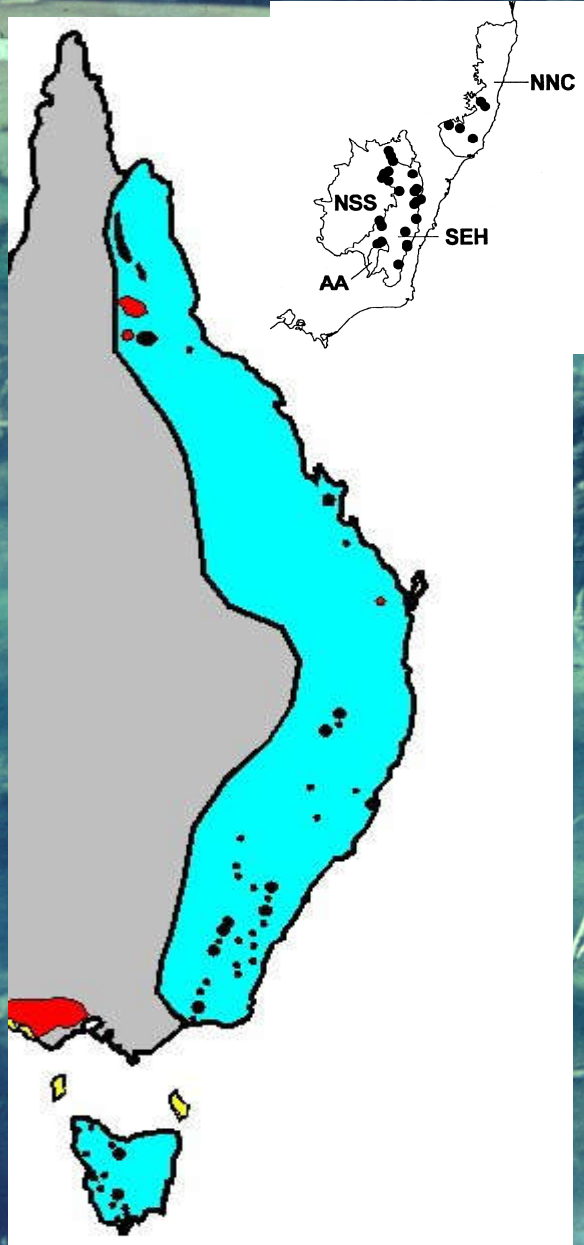
NEW SOUTH WALES - 1

- North Coast (NCC)
Stockyard Creek,
Willi Willi, Yessabah
& Upper Hunter areas



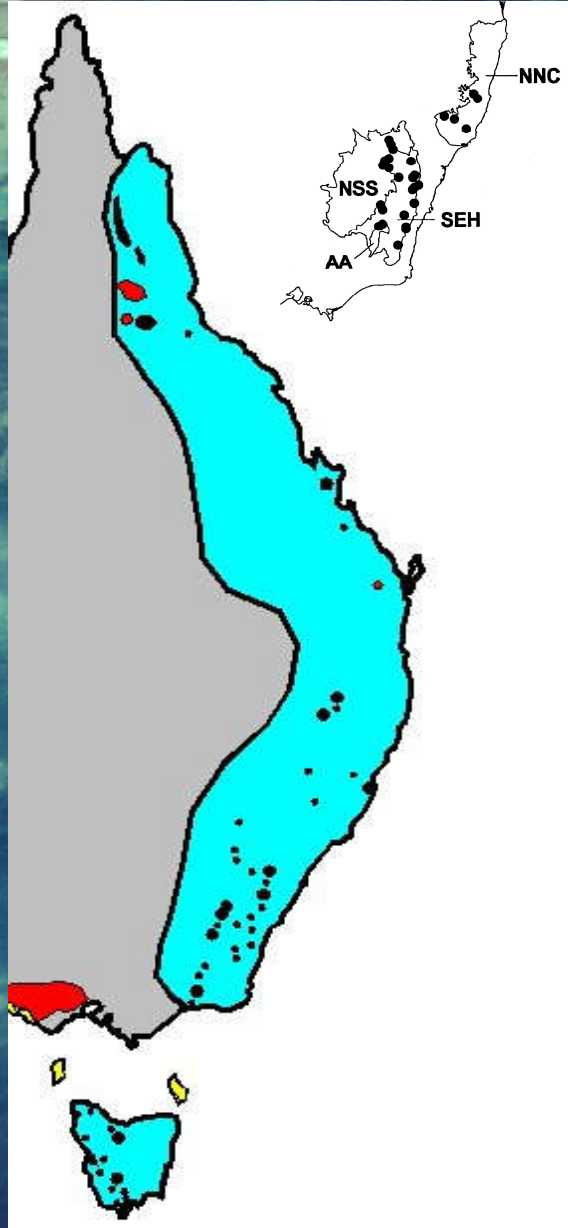
NEW SOUTH WALES - 2

- South Western Slopes (NSS):
Wellington, Bakers Swamp, Bowan Park & Canomodine.



NEW SOUTH WALES - 3

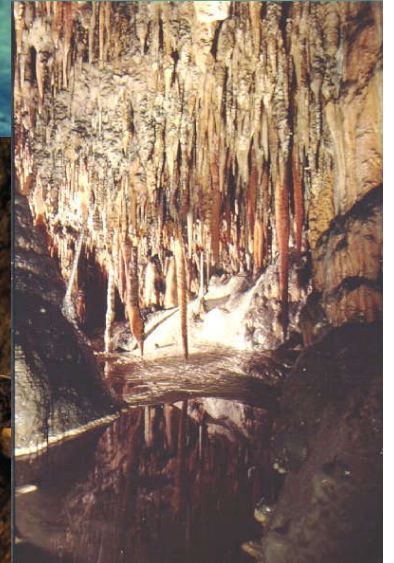
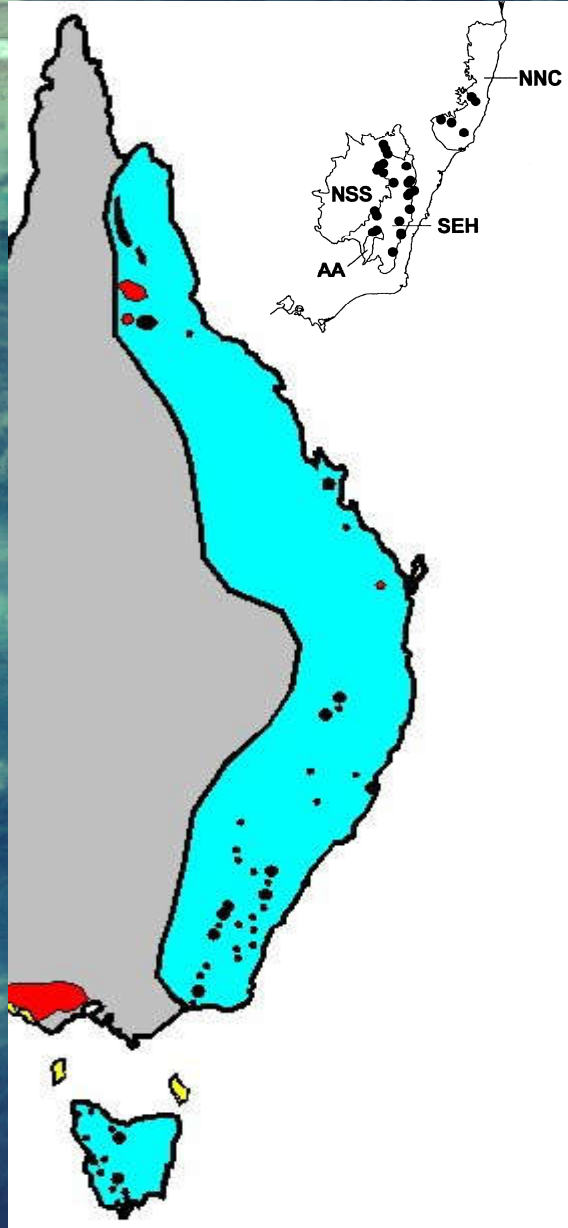
- South Eastern Highlands (SHE):
Wombeyan, Wee Jasper, Jenolan & Colong



Syncarid crustacean, Jenolan, New South Wales

NEW SOUTH WALES - 4

- Australian Alps (AA):
Coolleman &
Yarrangobilly



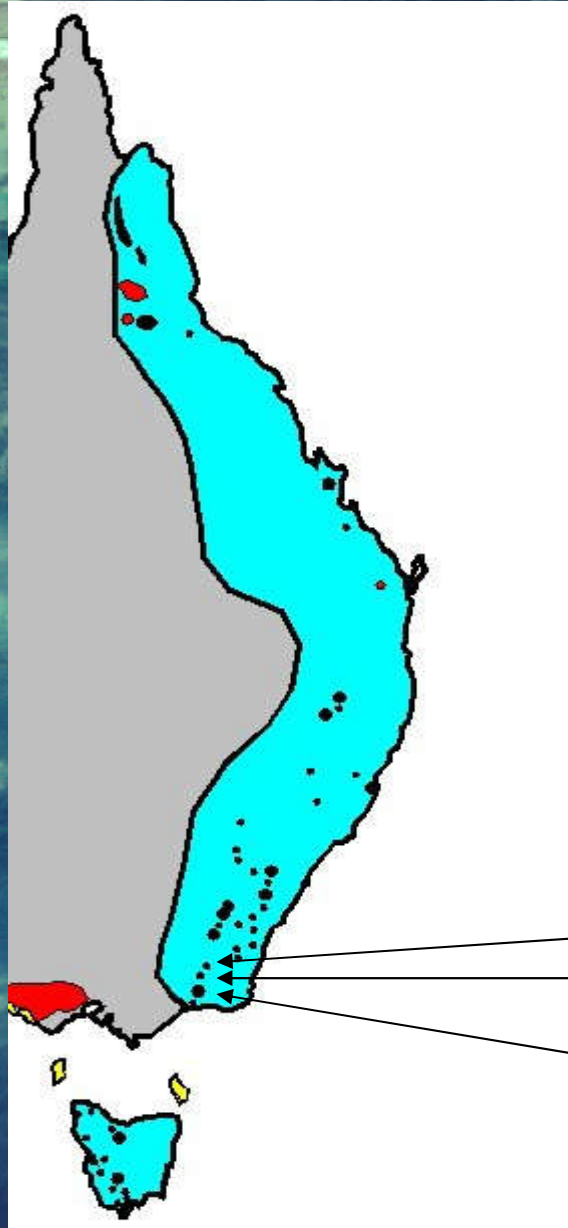
VICTORIA

?...

Indi (NSW)

Limestone Creek

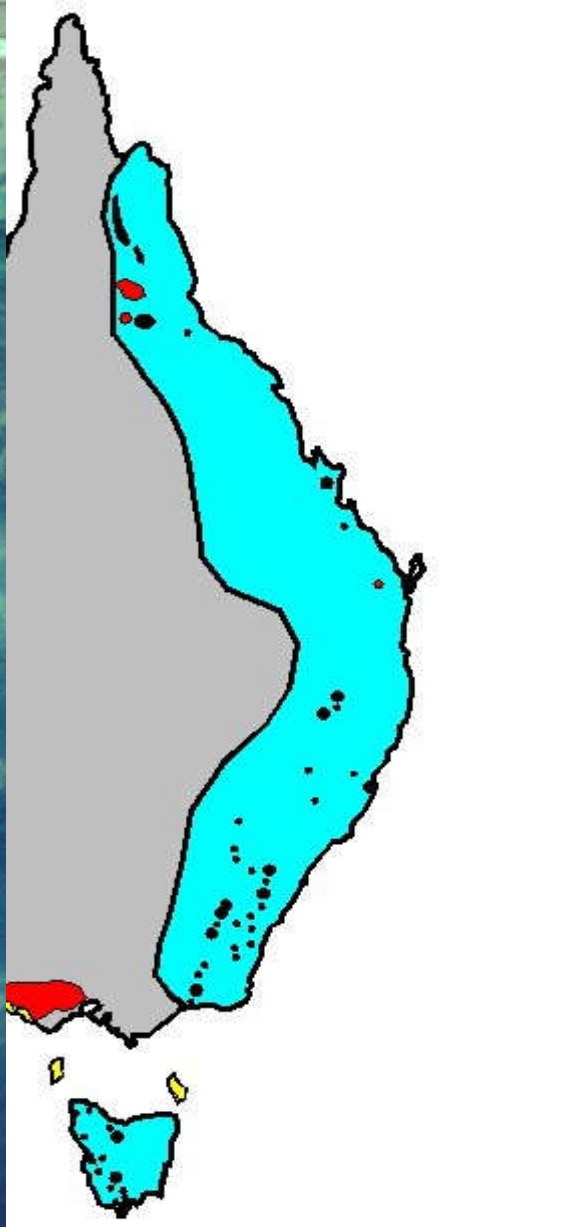
Buchan - Murrindal



VICTORIA

- Little or nothing is known about aquatic cave fauna here... but there are good sites!

Maybe
some of
these? →



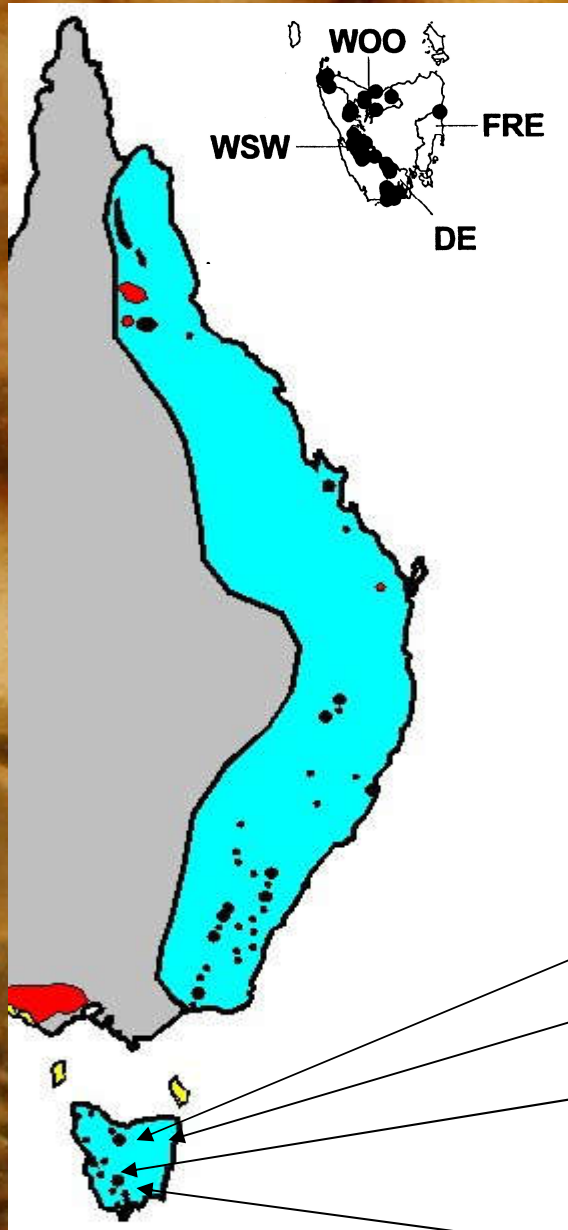
TASMANIA

Plentitude...

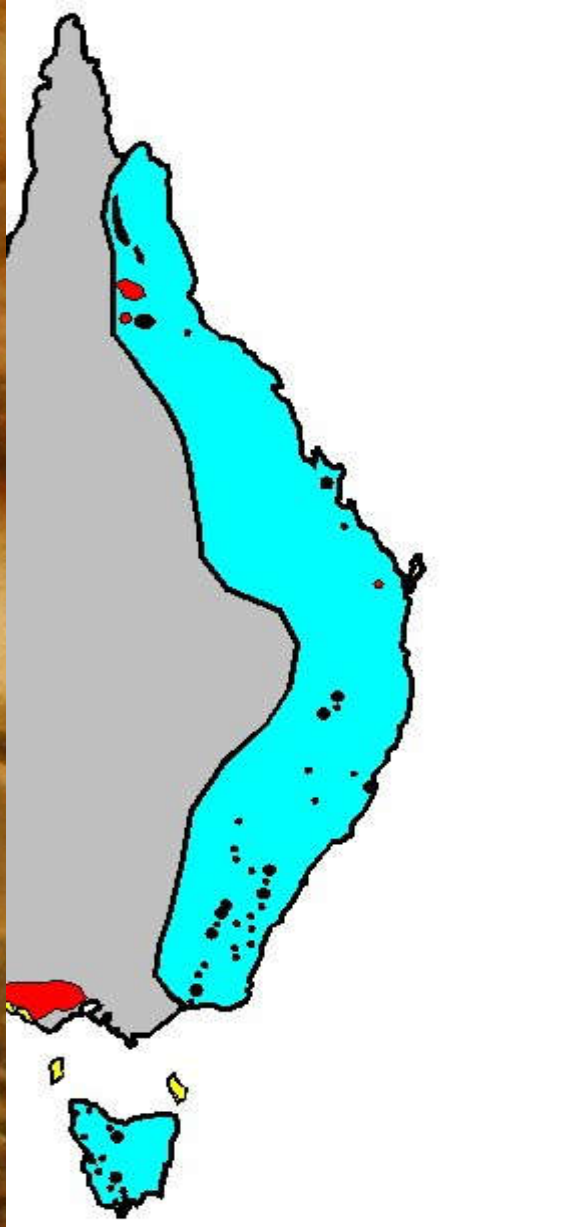
Mole Creek – Gunns Plains –
Loongana - Trowatta
Gray

Franklin – Bubs Hill – Precipitous
Bluff - Andrew

Ida Bay – Junee-Florentine – Hastings
– Craycroft



TASMANIA

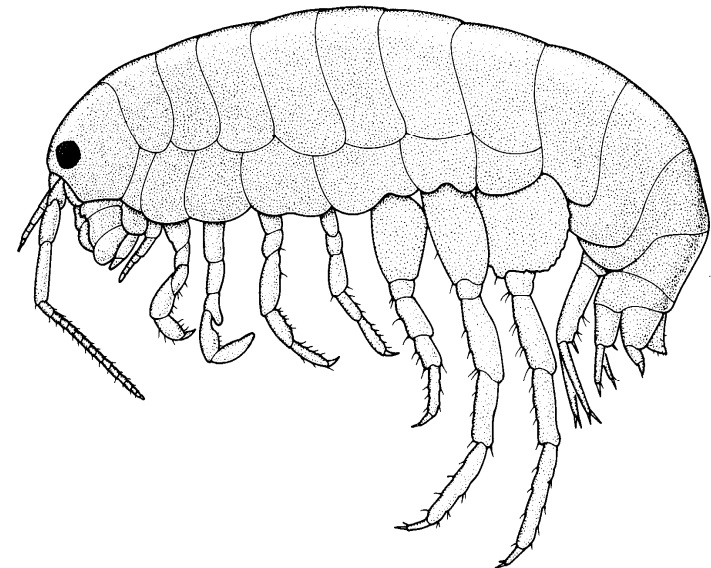
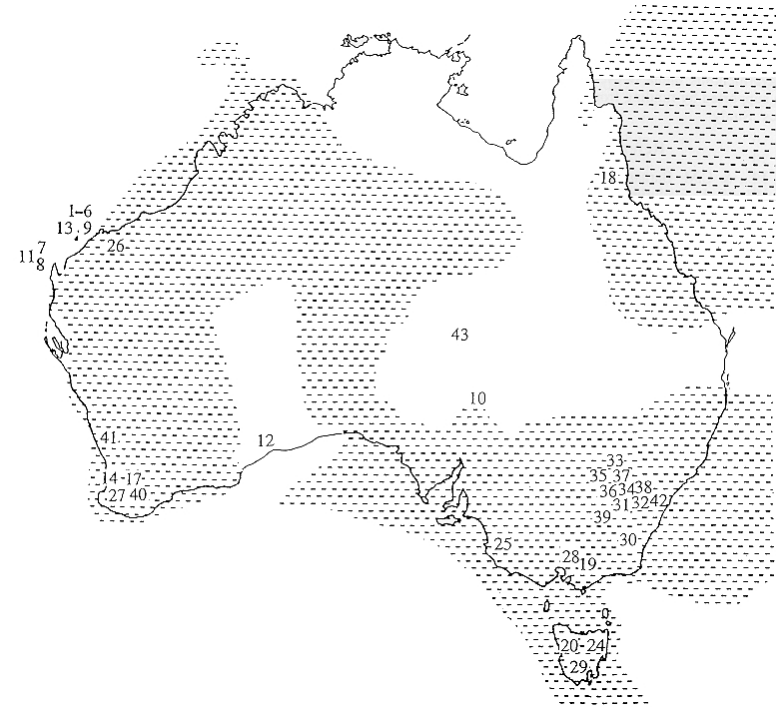


- **Woolnorth (WOO):** Mole Creek, Gunns Plains, Loongana etc
- **West and South West (WSW):** Franklin, Bubs Hill etc
- **D'Entrecasteaux (DE):** Ida Bay, Junee-Florentine, Hastings etc
- **Freycinet (FRE):** Gray



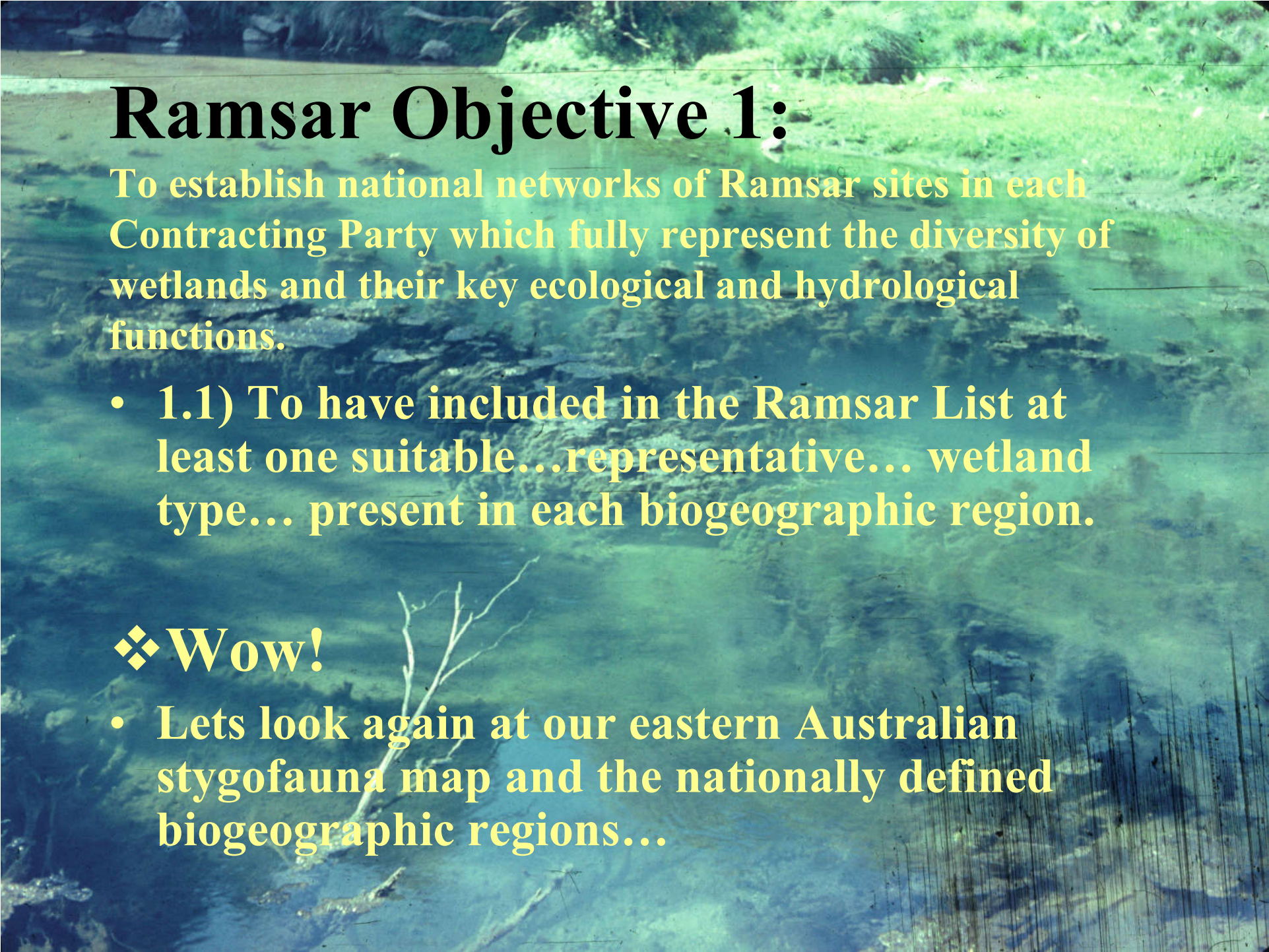
Connections: Distributions in an ancient continent

Distribution of known Australian stygobiont amphipods. Stippled area indicates landmass not inundated during the Cretaceous (119-114 million years ago) marine transgression. From Bradbury and Williams 1997.



Connections: Hyporheic & karst ecosystems





Ramsar Objective 1:

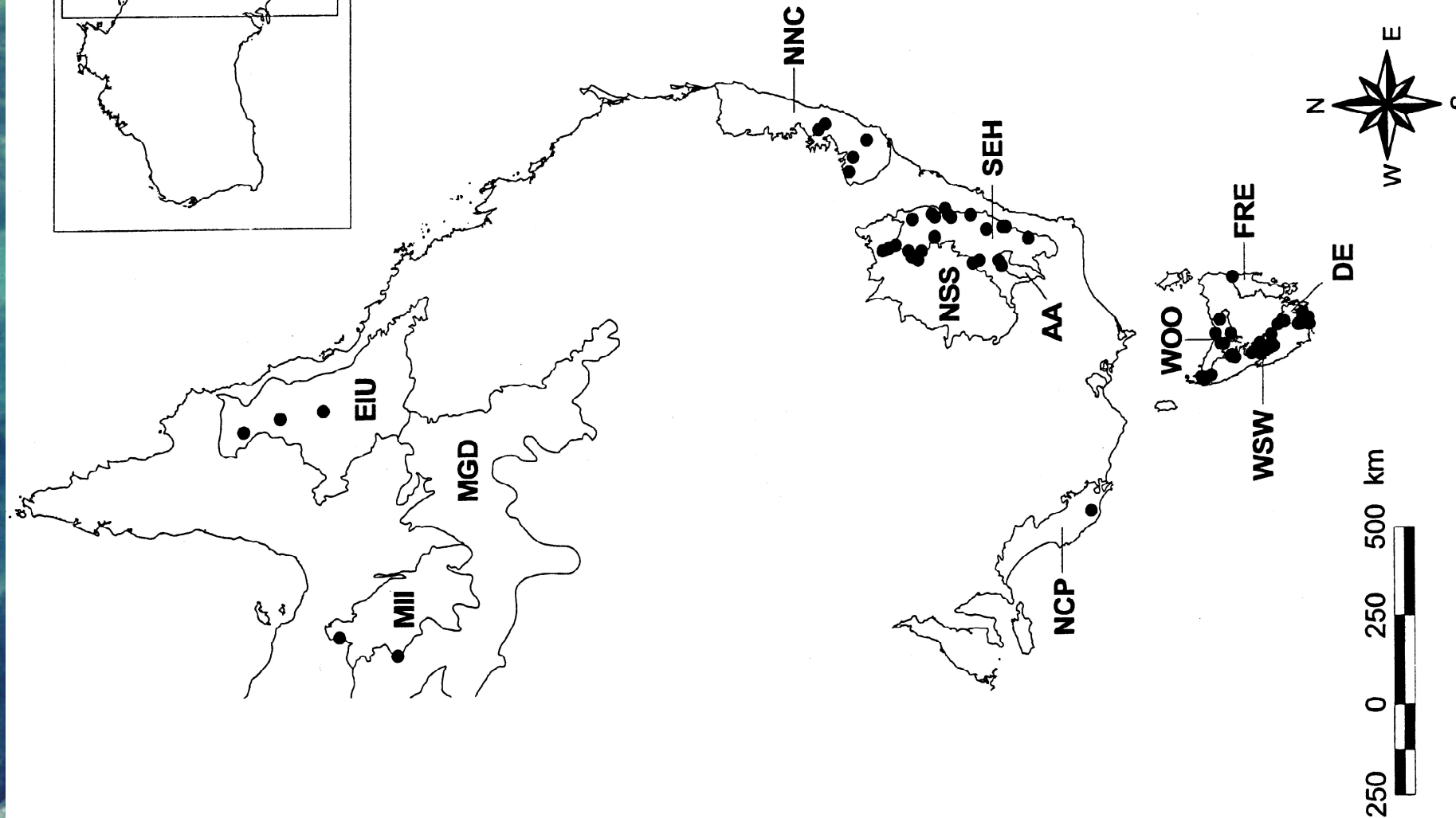
To establish national networks of Ramsar sites in each Contracting Party which fully represent the diversity of wetlands and their key ecological and hydrological functions.

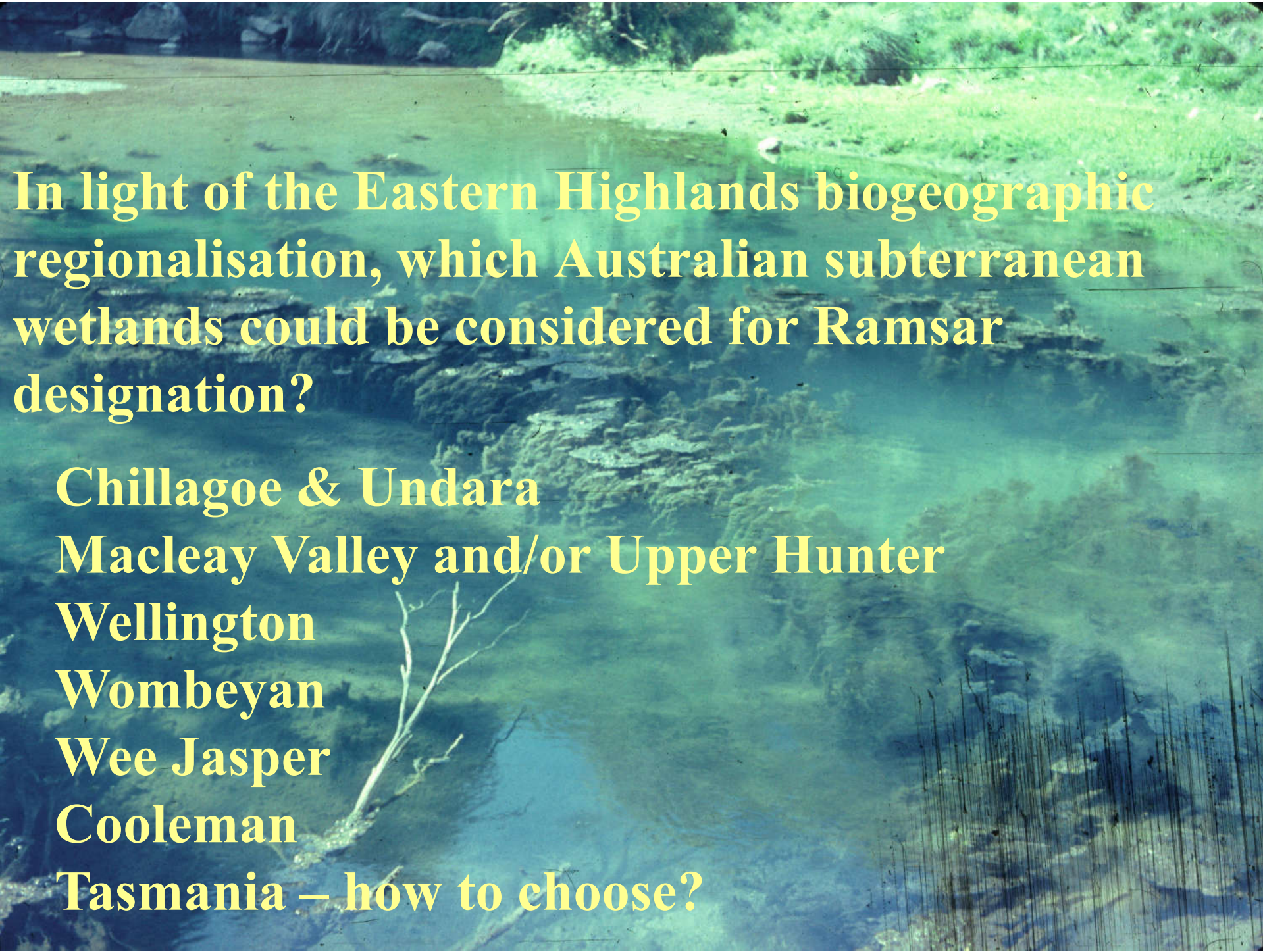
- 1.1) To have included in the Ramsar List at least one suitable...representative... wetland type... present in each biogeographic region.

❖Wow!

- Lets look again at our eastern Australian stygofauna map and the nationally defined biogeographic regions...

Distribution of stygofauna sites in Eastern Australia (after Thurgate et al 2001).





In light of the Eastern Highlands biogeographic regionalisation, which Australian subterranean wetlands could be considered for Ramsar designation?

Chillagoe & Undara

Macleay Valley and/or Upper Hunter

Wellington

Wombeyan

Wee Jasper

Cooleman

Tasmania – how to choose?

THREATS TO STYGOFAUNA

- Land clearing and sedimentation
- Water abstraction – mining
- Water abstraction – irrigation & sylviculture
- Pollution



A photograph of a cave entrance with water flowing over rocks. The water is clear and blue, and the rocks are dark and jagged. The background is a lush green forest.

ACKNOWLEDGEMENTS

- Images courtesy of the late Joe Jennings, Arthur Clarke, Ken Grimes, John Bradbury, NSW NPWS, Keir Vaughan-Taylor, Peter Serov, Mia Thurgate & Andy Spate.
- This presentation is based on Thurgate et al 2001 *Stygofauna diversity and distribution in Eastern Australian cave and karst areas*.

THE END!

