Kamilaroi (Indigenous) Knowledge and Methodologies to Inform Water Management

TE AWA O WAIKATO 2023

Ass/Pro Bradley Moggridge

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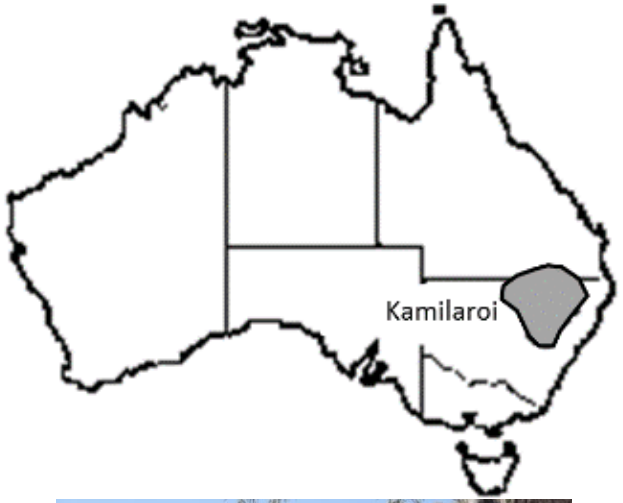
I am Kamilaroi

Yaama (a greeting, seeking - what is your intention?)
I acknowledge the Waikato Tainui and their Country.



Been here before

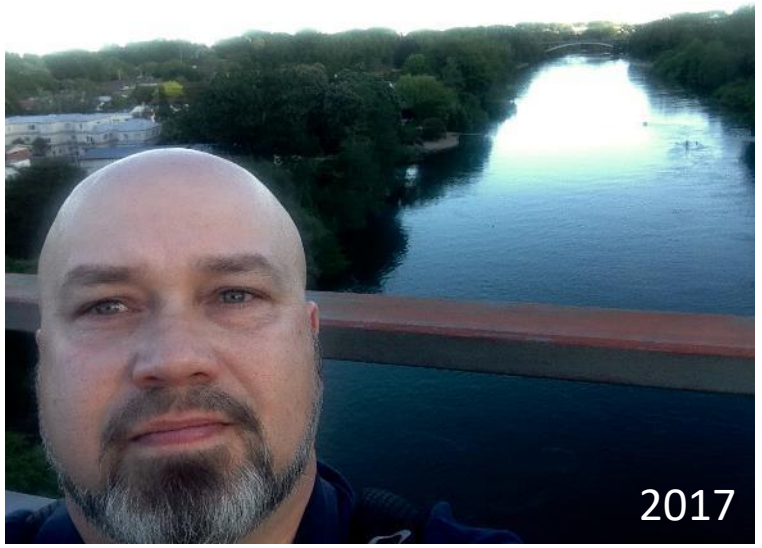
Off the bench 2016

2019


2016

Thank you:
Lorraine
Tim
Erina
Charlie
Deniz
Siobhan
WRA and WU


2019


2017


2023

Time for a good old fashioned Trans-Tasman bomb-off

Australia seems to only respond to a CRISIS

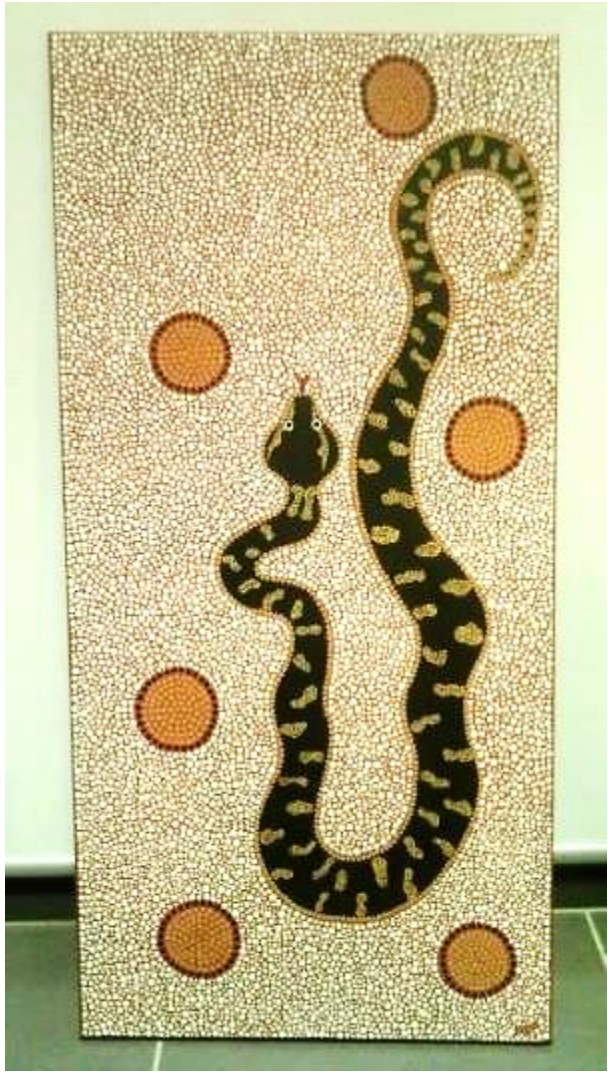
- 1000km of blue green algae (NWI and Reform)
- Mega drought after the Millennium drought (#Normal)
- Species extinction (Prof. Samuels EPBC Act Review 2020)
- 2018/19 Rivers drying up and Millions of dead fish (NFRS)
- 2022 Millions of dead fish 2.0 in the Baaka
- 2019/20 Devastating fires, 2023 fires have already started
- 2022 Floods (2 x 1in500yr) in a matter of months
- 2020 Australia was too late to stop the destruction of Juuken Gorge

Cultural Value of Water

Water is protected by Lore, it's in the songs, dances, Dreaming stories and art.

Traditional Water Knowledge and Science:

- Acknowledge our diversity
- How our old people knew water - reconnect
- Tell our stories our way about water
- Indigenous Research Methodologies
- Rights and Values of water, *decolonise water*
- Culturally validate our knowledge



Policy and Rights Setting

What does history tell me? We are on and have survived the driest inhabited continent on earth, but:

- **No Voice, Treaty or Truth = No *Veto***
- Our land and water was **given away,** our waters are **modified, diverted, harvested, over-extracted and polluted**
- Our people were **not counted as humans till late 1960's**
- **Review after review telling us what we don't have (NWC, PC, Senate)**
- When we became human all good **land or water was gone**
- **Water and land was decoupled in** early 2000's
- **So, if we want water, we have to buy it** (win win for the settler)

AIM: To test a process which engages Indigenous people in spirit of co-design and co-management of river flows and wetlands

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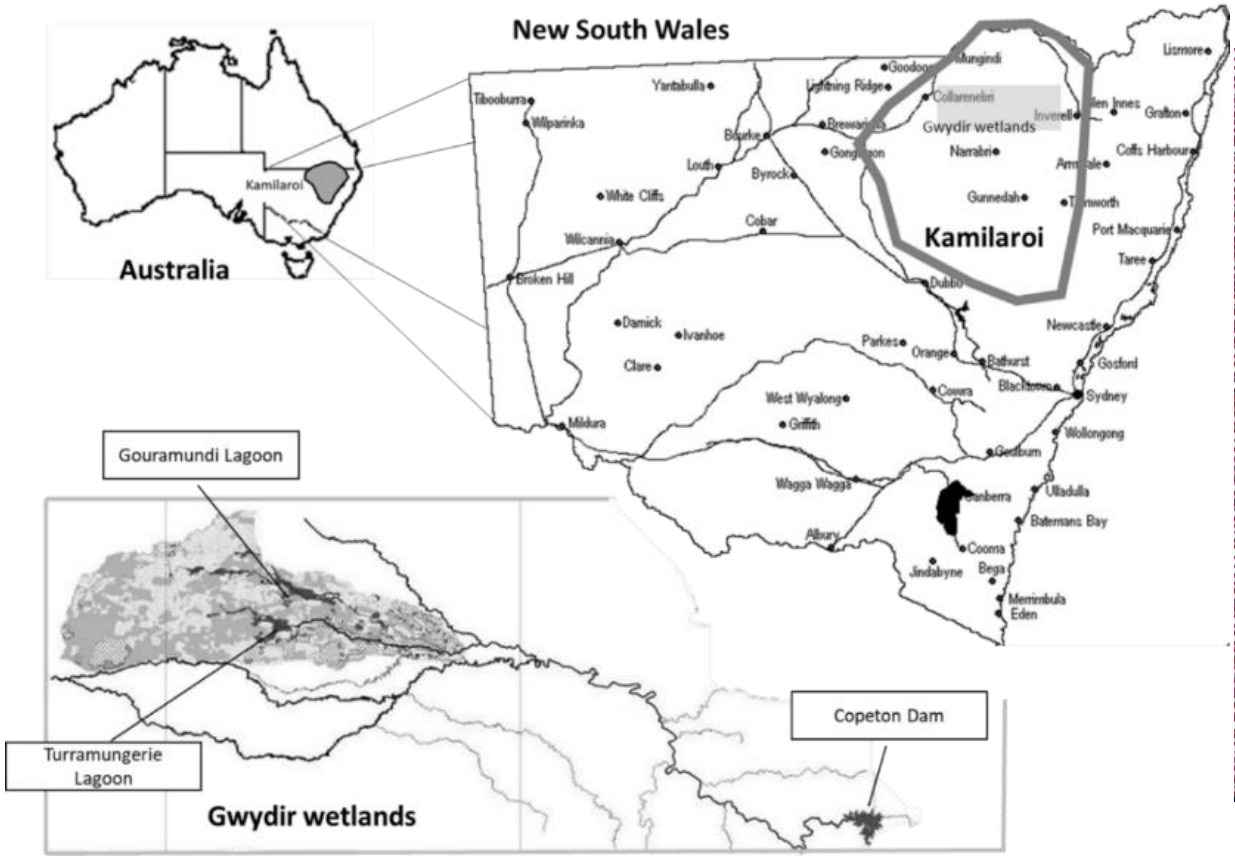
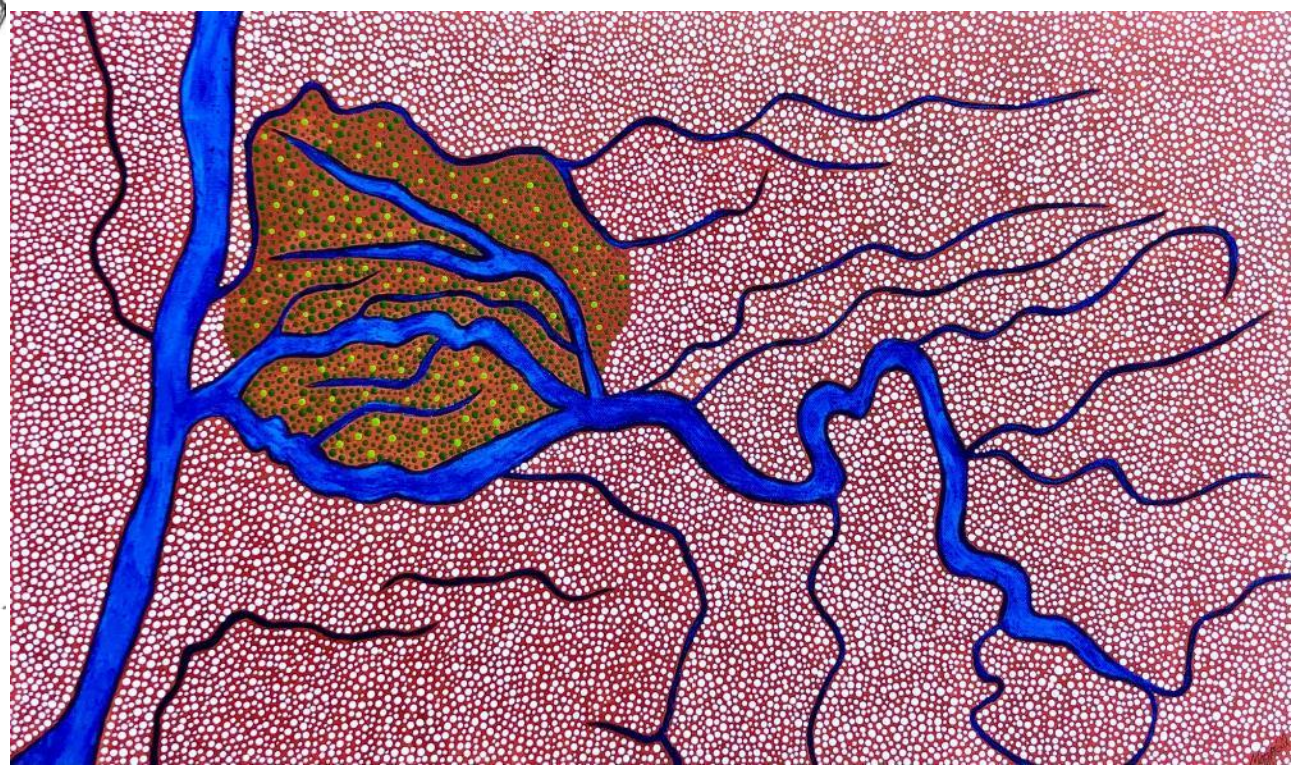
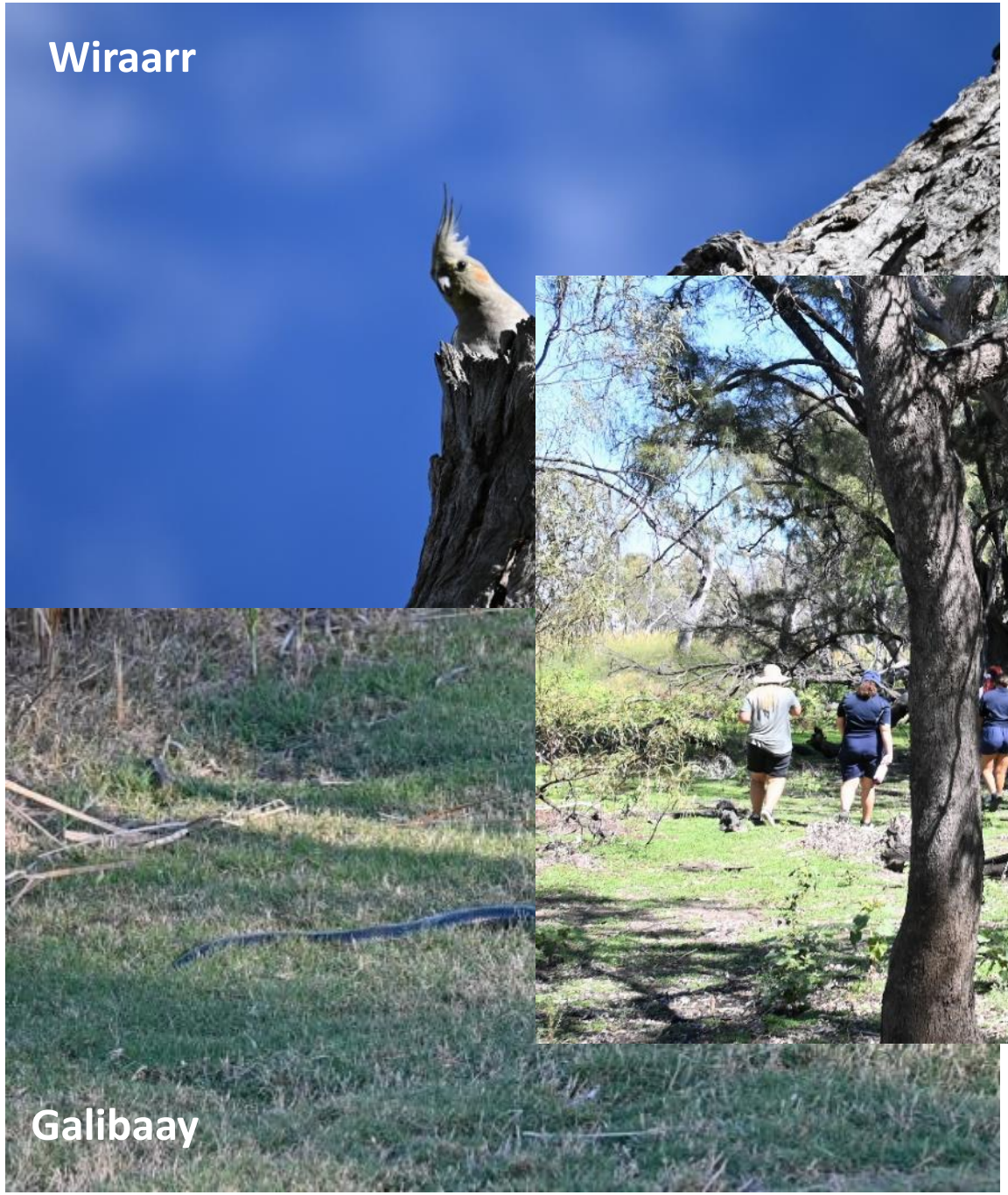
Case Study Location

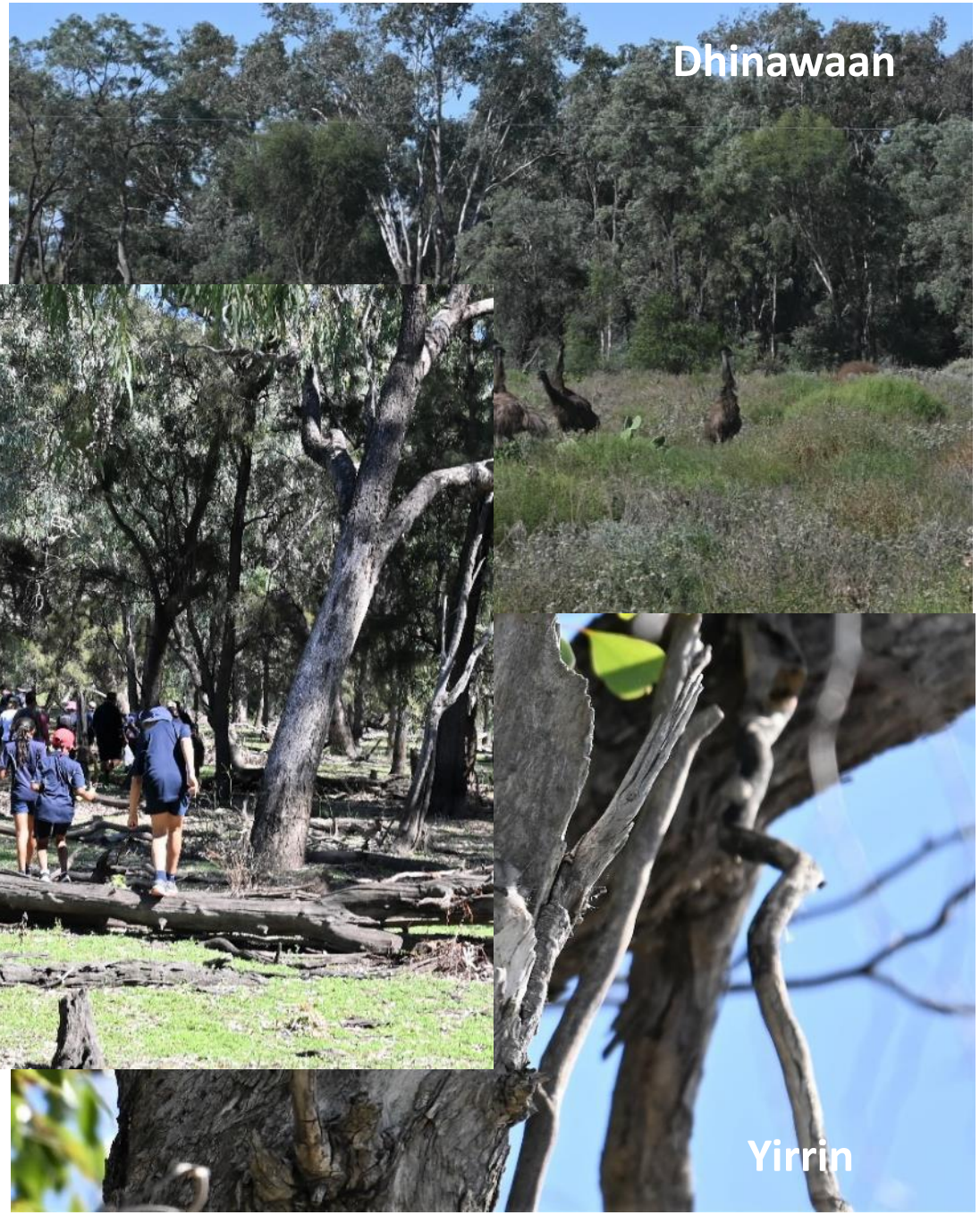




Case Study Location

- The **Gwydir Wetlands State Conservation Area** was created by the NSW Government in February 2011 and covers an area of 9712.78 hectares (**9.7% in public hands (National Parks)**.
- This is **smaller than the original extent of the wetlands** (more than 100,000 hectares) as many parts of the wetlands have been reclaimed (stolen twice) and levelled for you know what.
- Other wetland areas are **on private land**
- So, Kamilaroi are yet to get the keys to their Country after being **locked out for 160+years**


Wiraarr
Galibaay


Dhinawaan
Yirrin

Methods

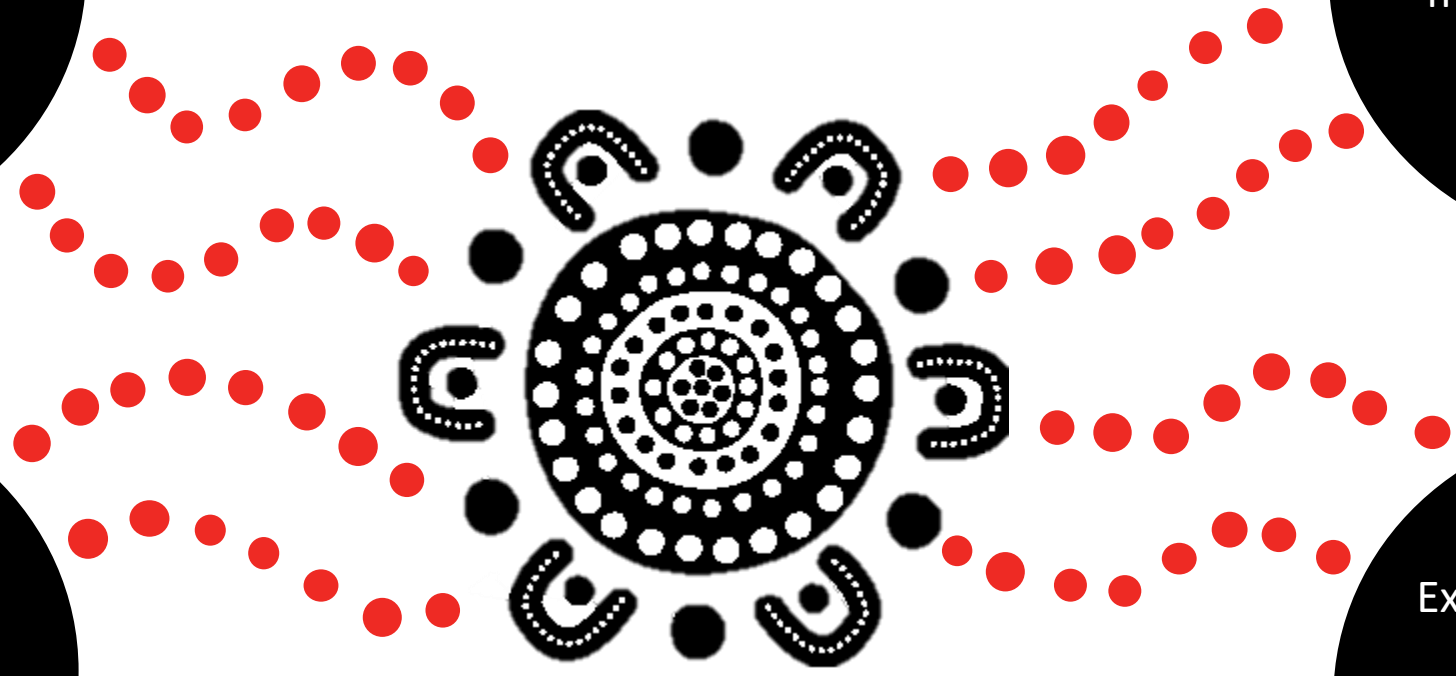
- **Kamilaroi people engaged on-Country** (under Ethics Approval HREC 17-256) face to face was essential.
- A **generic set survey questions** were used, on-Country around **the sacred fire** (some yarns drifted off to amazing places not available, sorry)

… all while having to deal with the **end of the COVID pandemic** and then ***La Nina*** kicked in (limiting access to people and Country).

Outcomes

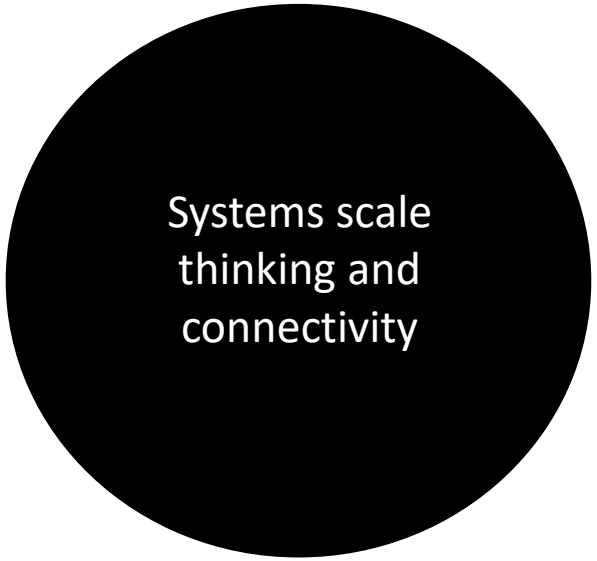
Systems scale thinking and connectivity

Species, Seasonal markers and cultural harvest



Long knowledge (millennia)

Exclusion from water markets and management processes by complexities of governance



- Strong belief in the **interconnectedness of the biophysical and spiritual worlds**
- A **genuine reluctance to engage with processes which did not recognise the interconnectedness** of systems e.g. groundwater and surface water management
- **Responded positively to social-ecological and ecosystem thinking**, negatively to reductionist and habitat specific approaches
- **Climate has changed and is impacting our Country**

Cl es

etland

Dec 2020

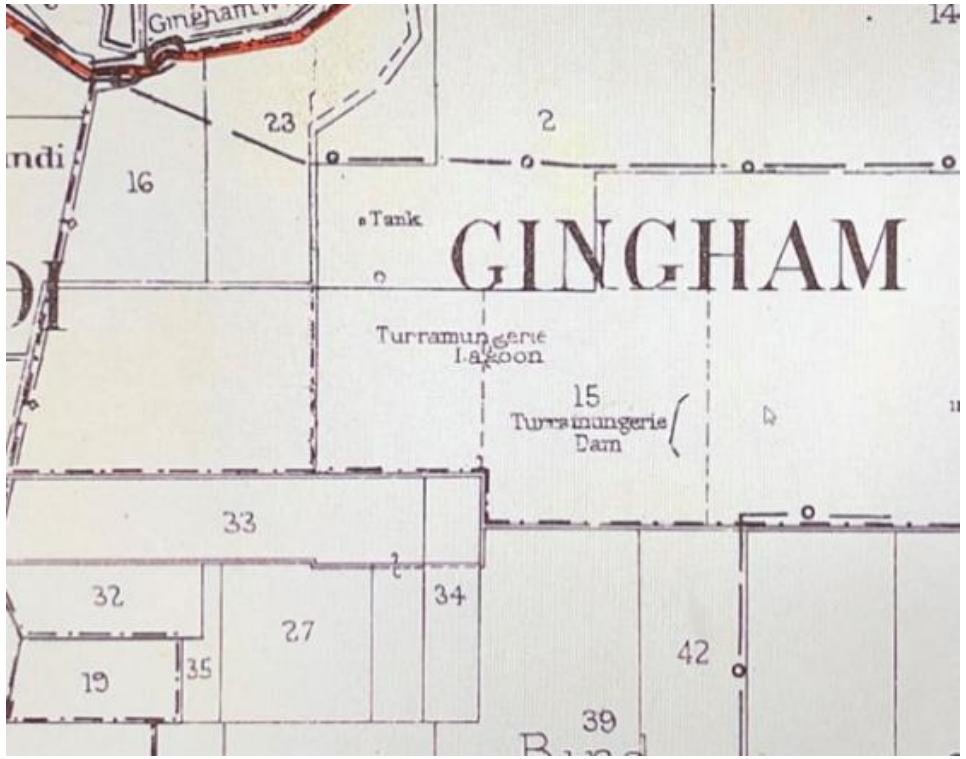
Systems scale thinking and connectivity

- A site in the Gwydir complex was identified as **a site with cultural values, cultural indicators as well and non-Indigenous values** (aesthetics and ducks).

- A large lagoon (calling it **Turramungerie) needs regular watering**, next to the red sand ridge containing:
  - significant cultural plant/food species (maybe translocated),
  - A remaining large scarred tree and
  - even a koala scat.


Guda Goona - Koala scat


Red Ri



Turramungerie Lagoon referenced on County of Benarba - Gingham Parish HLRV map dated 29/9/1950 https://hlrv.nswlrs.com.au/

Turramungerie Lagoon very dry – in 2018

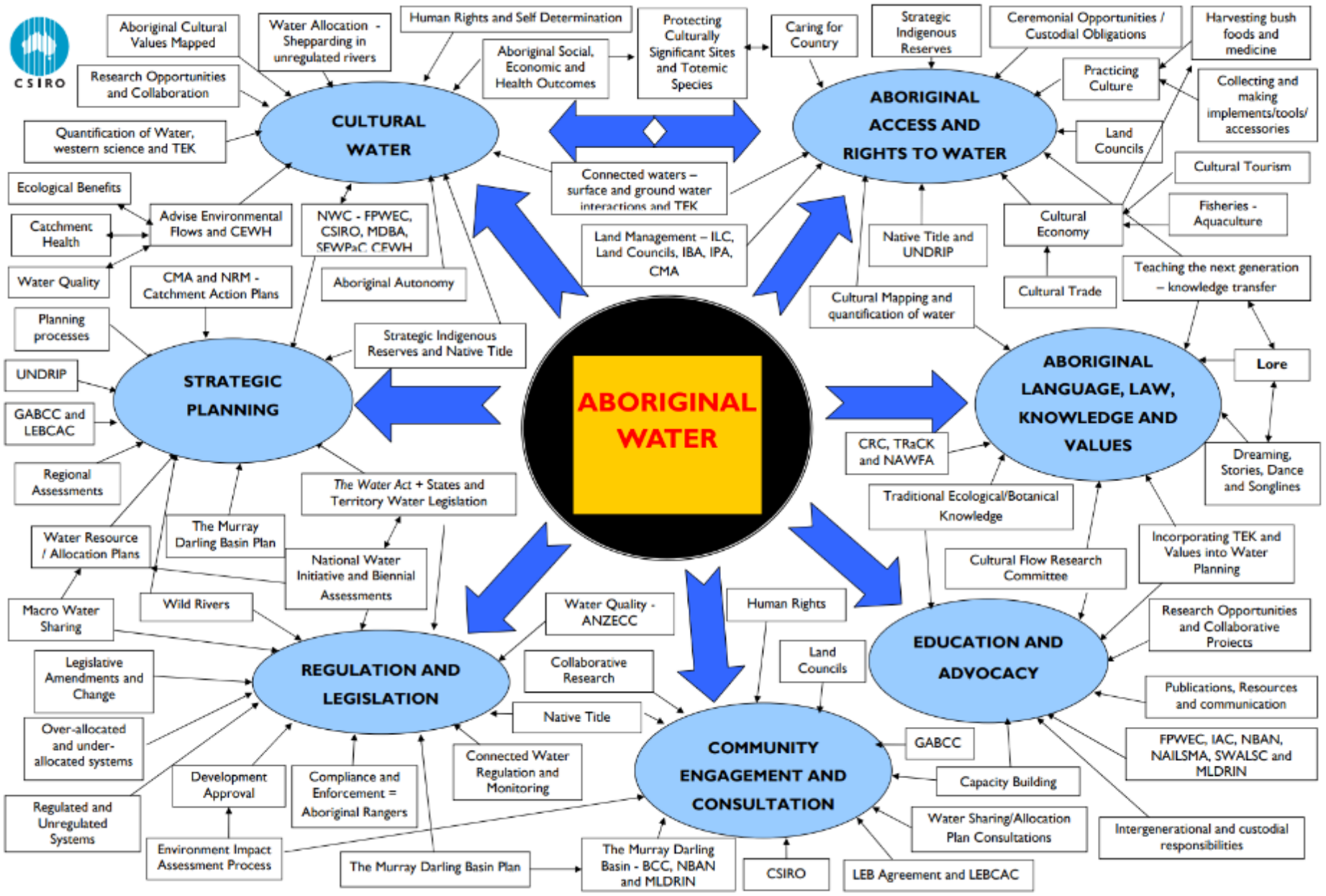
Turramungerie Lagoon very wet - La Nina in 2022

ART: Brad Moggridge

We Risk: Loss of species and knowledge of seasonal markers and cultural harvest and flow cues

- **‘Water literacy’** is a significant barrier to participation in natural resource management
- **Cultural barriers for younger Kamilaroi people**
- **A lack of appropriate mechanisms for knowledge exchange and information to support engagement**
- **Almost zero water entitlements**

Exclusion from water management processes by complexities of governance



Exclusion from water management processes by complexities of governance

Brad Moggridge (unpublished)

Water management in the Gwydir

- There is **environmental contingency allowance (ECA)** available in the Gwydir water sharing plan, could be accessed for cultural and ecological outcomes.

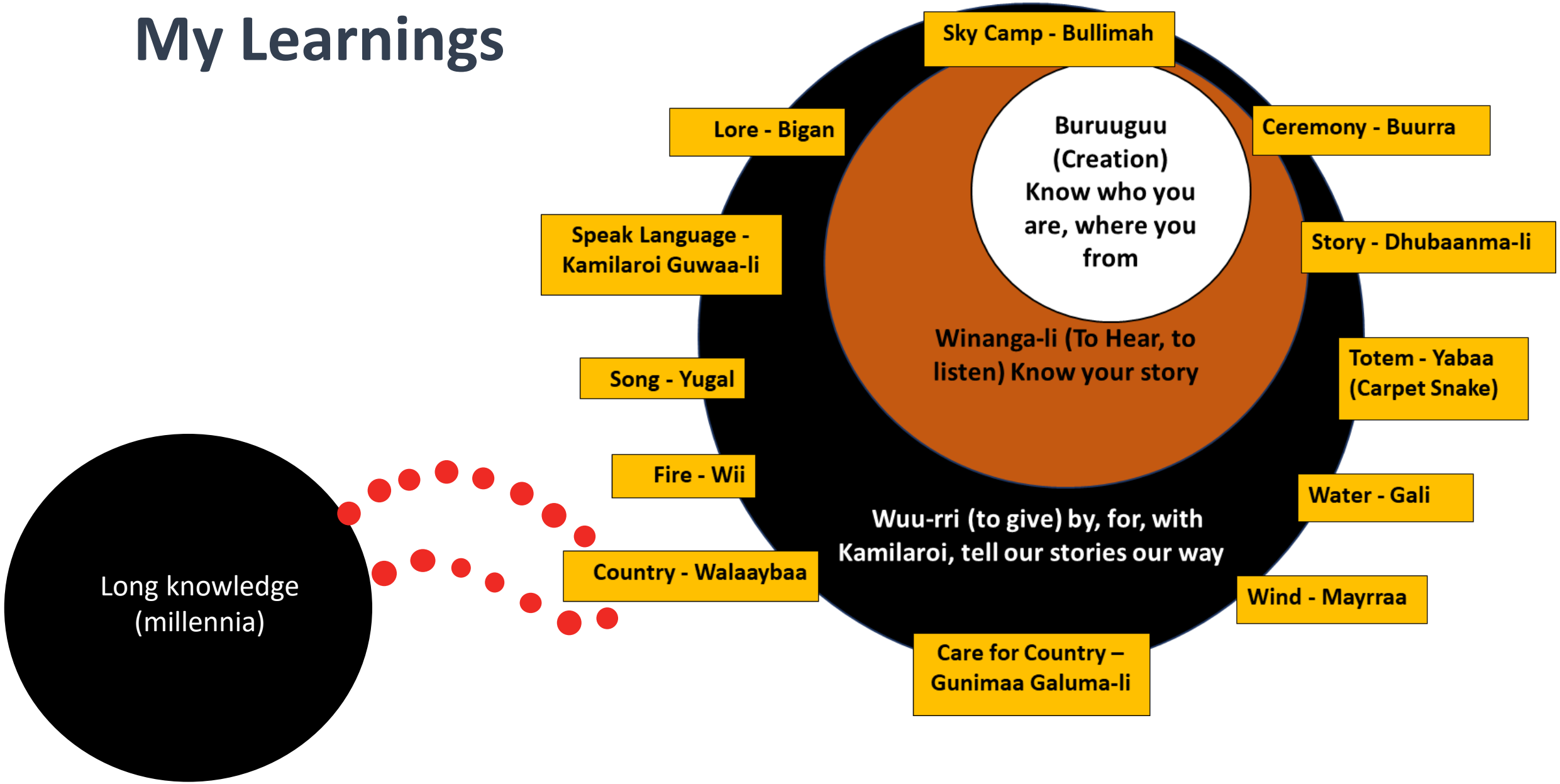
- Cultural knowledge linked to values and sites identified water landscapes that **in the past received regular water and now don't**

- Constraints on this flat country, – lack of **Aboriginal advice**, **diversions via earth mounds**, **over extraction** upstream and **harvesting the water on the floodplain**.

Water management in the Gwydir

Constraints

My Learnings



FROM: 2023 Moggridge, B. and Thompson, R.M., Indigenous engagement to support resilience: a case study from Kamilaroi Country (NSW, Australia). Chapter 18 in Thoms, M. and Fulller, I (eds). Resilience and Riverine Landscapes. Elsevier.

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Conclusions

- Water management in Australia **has to date failed to effectively engage Indigenous perspectives**, and there is an urgent need to move from a consultation model to co-design and co-implementation.

- **Indigenous perspectives can be gathered** and how that knowledge can be used to generate management-relevant information.

Conclusions

- Engagement is possible in two ways:
  1. Through **building policy which is equitable and inclusive**, and therefore more likely to be sustainable and resilient.
  2. Through **incorporating Indigenous long-term knowledge into systems science**, undertaking a **Cultural heritage study**, enabling a better understanding of **how everything connects** through time.

- **Indigenous engagement is both an equitable outcome, and of benefit to the broader effort** to better manage ecosystems for resilience.

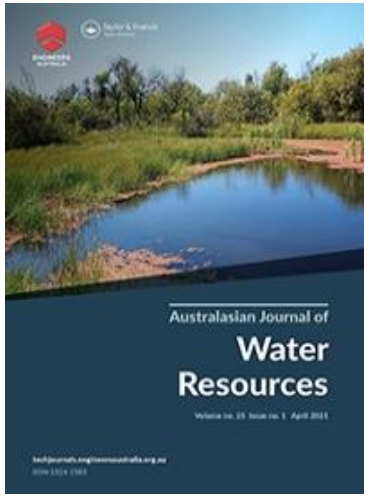
For more detail:

***Australasian Journal of Environmental Management 2019*: Vol 26(3):**

- Indigenous co-edited (Prof S. Jackson)
- Indigenous co-led and authored (Aust and NZ)
- Abstract written in **Nyikina Language**

***Australasian Journal of Water Resources 2021*: Vol 25 (1):**

- Indigenous co-edited (Dr G. Tipa)
- Indigenous co-led and authored papers (Aust and NZ)
- ***GN Alexander Medal* Winning paper** (Moggridge and Thompson) from Engineers Australia; and
- River as the 1st Author (**Martuwarra RiverOfLife**)



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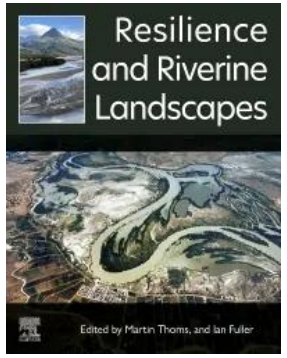
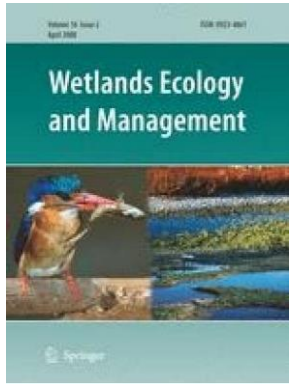
For more detail:



Moggridge, B.J. and Thompson, R.M. 2023, In press. Indigenous Engagement to Support Resilience: A Case Study from Kamilaroi Country (NSW, Australia). Chapter 18, in Thoms M. and I. Fuller (Edss). ***Resilience and Riverine Landscapes*.** ISBN 032391716X (ISBN13: 9780323917162)
Available January 2024



Moggridge, B.J., Thompson, R.M. & Radoll, P. (2022) Indigenous research methodologies in water management: learning from Australia and New Zealand for application on Kamilaroi country. ***Wetlands Ecology and Manage* 30, 853–868 (2022).** https://doi.org/10.1007/s11273-022-09866-4

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Yanaay (I’m going now)