



Charles Sturt
University

Gulbali Institute
Agriculture Water Environment

Integrating First Nations Water Management
Sciences for Climate Resilience across
the Water Resources of the Murray-Darling Basin:

Australian lessons for international source to sea
sustainability.

Prof. Troy Meston
First Nations Research Lead



Who am I?

Troy Meston (Yuwaalaraay/Gamilaroi: **First Nations Research Lead**) has over the past 20 years, advised governments and national agencies on issues related to Indigenous health and education, researched AI and digital learning, climate justice, community radio, and trauma and neuroscience.



The Gulbali Institute



Impactful and Innovative Agriculture, Water and Environment Research

At the Gulbali Institute, we are proud to be gifted our name *Gulbali ngurambang* which translates "*to understand country*" from the Wiradjuri First Nations as the guiding principle of how we do our work to create impactful agriculture, water and environment research, grounded in Charles Sturt's footprint across the Murray-Darling Basin, but with impact across Australia and globally.



Our priorities



1 Impactful projects

2 Valued partnerships

3 Embedded First Nations science & knowledge

4 Thriving hubs

5 Growing innovation leadership

The Murray-Darling Basin



The Murray-Darling Basin: Source to Sea

Why First Nations Water Management Sciences Matter

Climate, Power & the Basin



Key facts



The Murray–Darling Basin is complex, diverse and constantly changing in response to the climate and human activities.



Projections suggest a likely increase in drought frequency and severity, while at the same time, heavy rainfall is expected to increase.



Less rainfall will affect the storage of water and increase demand from irrigators and communities.



The Bureau of Meteorology says average rainfall in the Basin is projected to decrease. However, there is much variability predicted with declines less certain in the northern Basin.



Relationality not Commodity



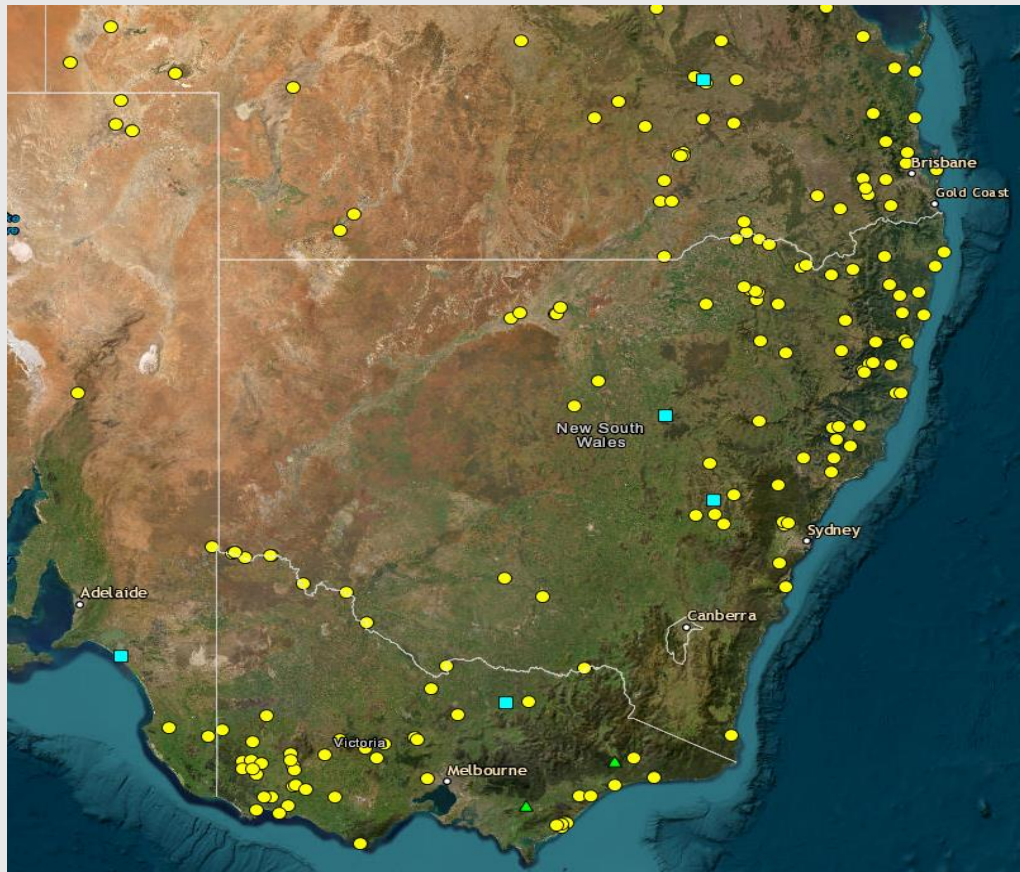
The Aboriginal kinship system recognises the connections, not just between humans, but between humans and all other life. Nothing exists in isolation, and every entity—be it rock, tree, river, or human—is intrinsically linked through a complex web of relationships.

"Everyone has a place in this system, and by knowing this place, people know their rights and responsibilities—to provide another with food, to care for a specific story or site, to punish a wrongdoer."

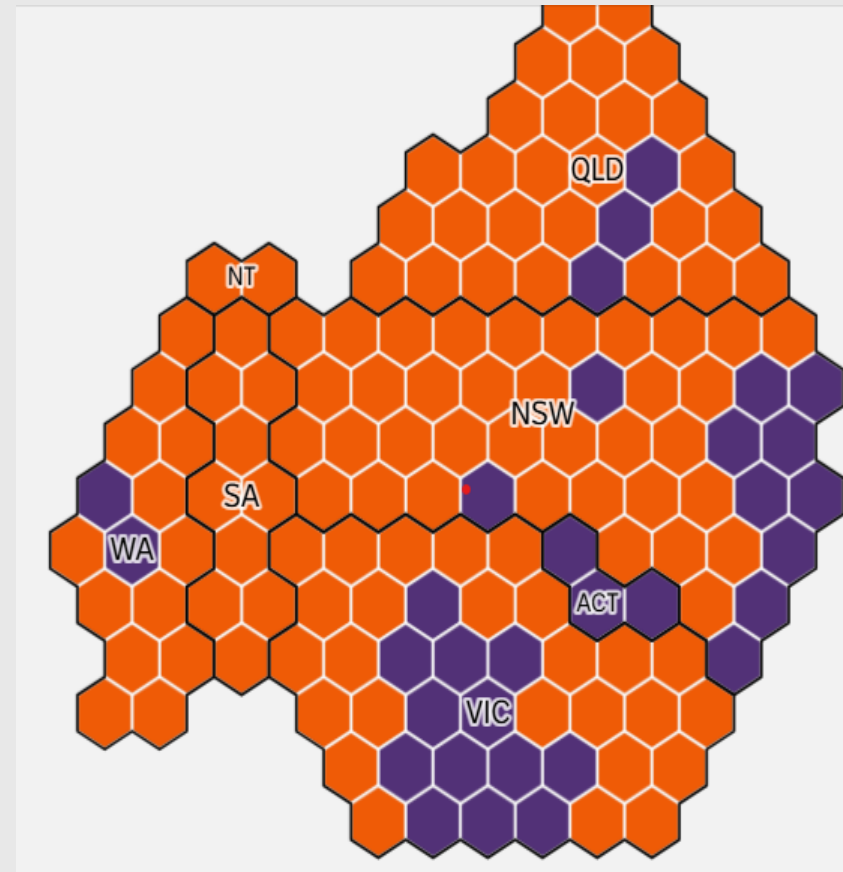
(Kwaymulina & Kwaymulina, 2012)



Frontiers of the Basin



<https://c21ch.newcastle.edu.au/colonialmassacres/map.php>



<https://www.abc.net.au/news/elections/referendum/2023/results/map>

Research & First Peoples

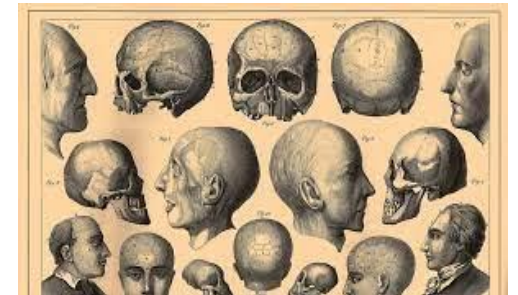


The bone collectors: a brutal chapter in Australia's past

The remains of hundreds of Aboriginal people, dug up from sacred ground and once displayed in museums all over the world, are now stored in a Canberra warehouse. When will they be given a national resting place?

Remains of 18 Indigenous people held by UK museums return to Australia

Return is part of painstaking effort to recover thousands of ancestors stolen from traditional lands who now lie in more than 20 countries



A list of the remains comprising the Berry Collection compiled in 1987, before any repatriations were made, documented more than 700 human skeletal remains. Prior to their return, Indigenous skulls and mandibles made up three-quarters of the collection. Over sixty remains of juveniles and infants were represented, including at least four skeletons of Australian Indigenous children.

Toward Social-Ecological Synergy

First Nations Research Policy



WHAT IS UNDRIP?

The "United Nations Declaration on the Rights of Indigenous People" defines the rights that Indigenous peoples around the world deserve. UNDRIP is not a law, but it tells the Government of Canada how to make sure its laws do not harm Indigenous peoples and do protect their rights.

UNDRIP has 46 articles that define Indigenous rights. They include the right to:

Be free and equal to everyone else.



Live in a safe and appropriate house.



Access services for your health.



Live a life that is safe and without violence.



Practice and protect your culture.



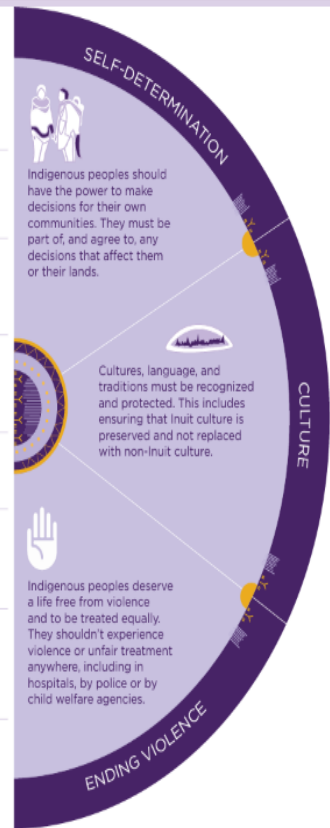
Stay in your community and on your land.



Have a spiritual connection to your traditional lands and waters.



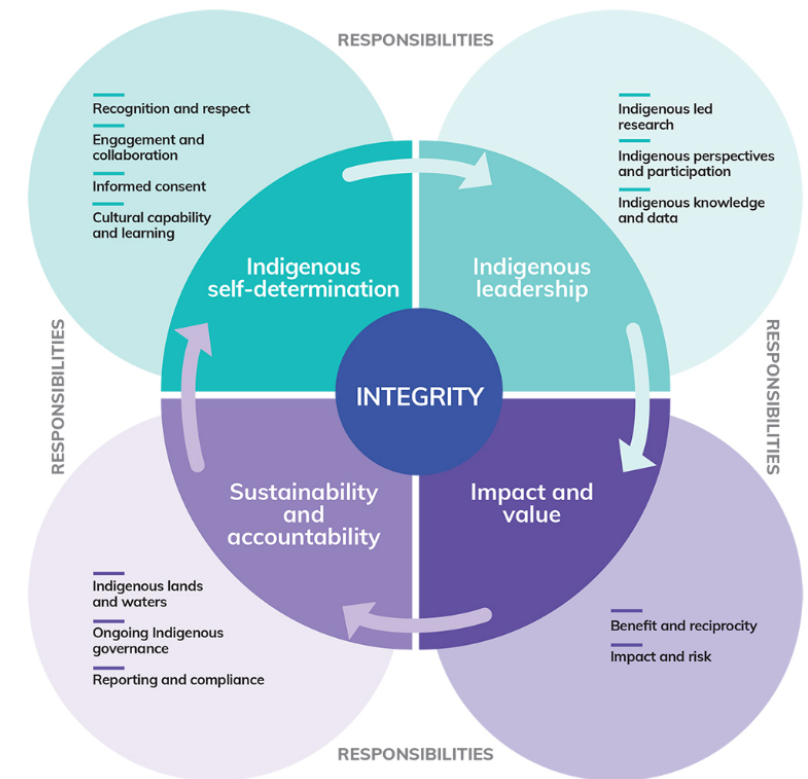
Have your voice heard in decisions that may affect your rights.



Australian Government
National Health and Medical Research Council

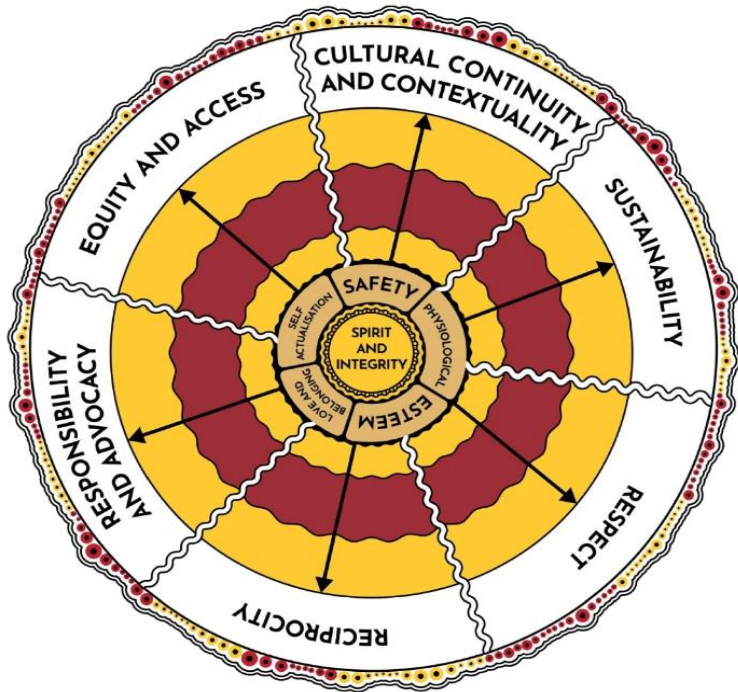
NHMRC

Ethical conduct in research with Aboriginal and Torres Strait Islander Peoples and communities: Guidelines for researchers and stakeholders



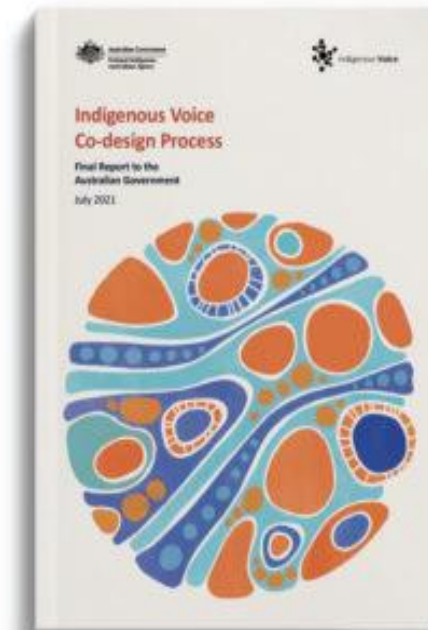
First Nations Co-design

From: "The most culturally safe training I've ever had": the co-design of a culturally safe Managing hepatitis B training course with and for the Aboriginal health workforce of the Northern Territory of Australia



Key

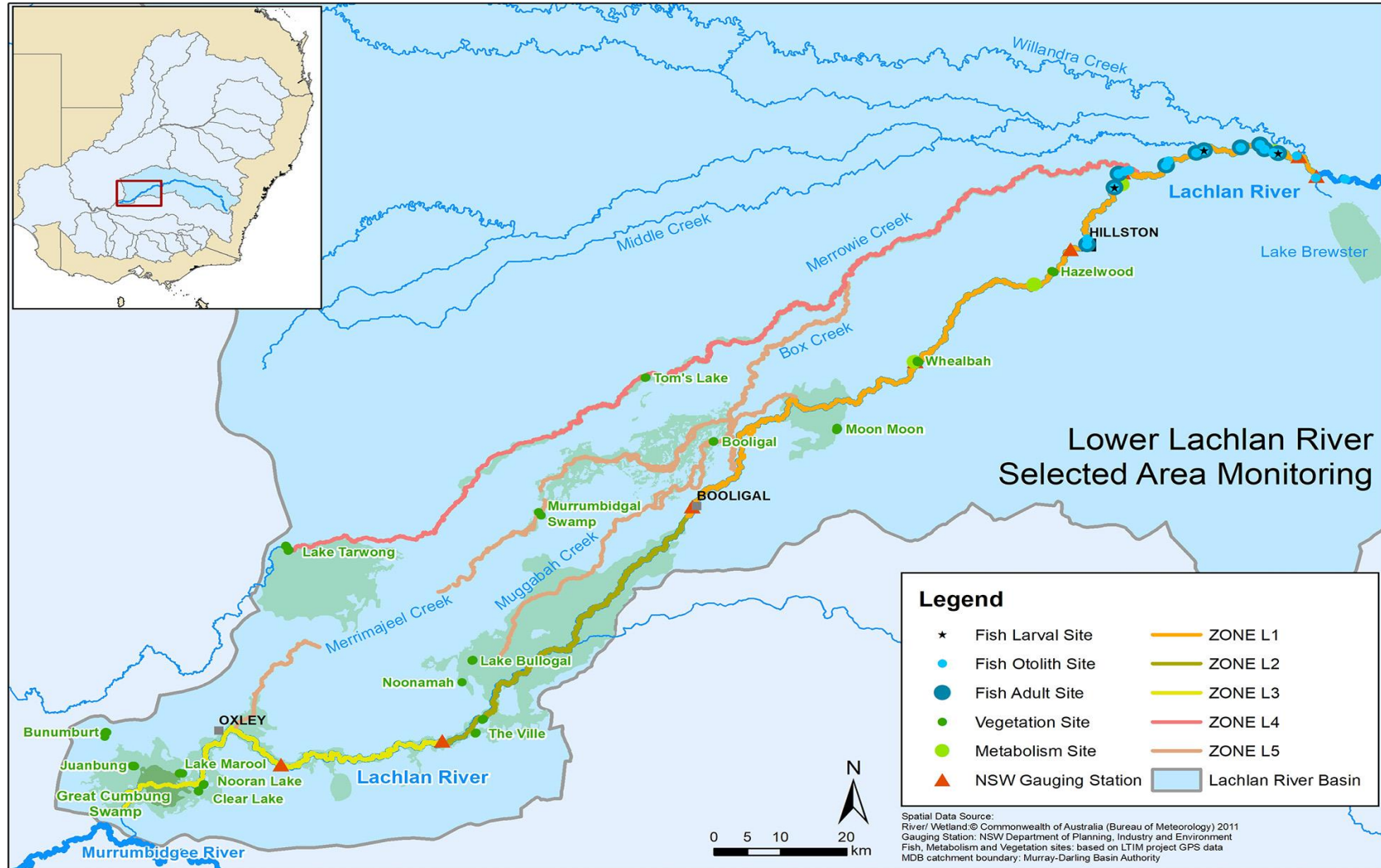
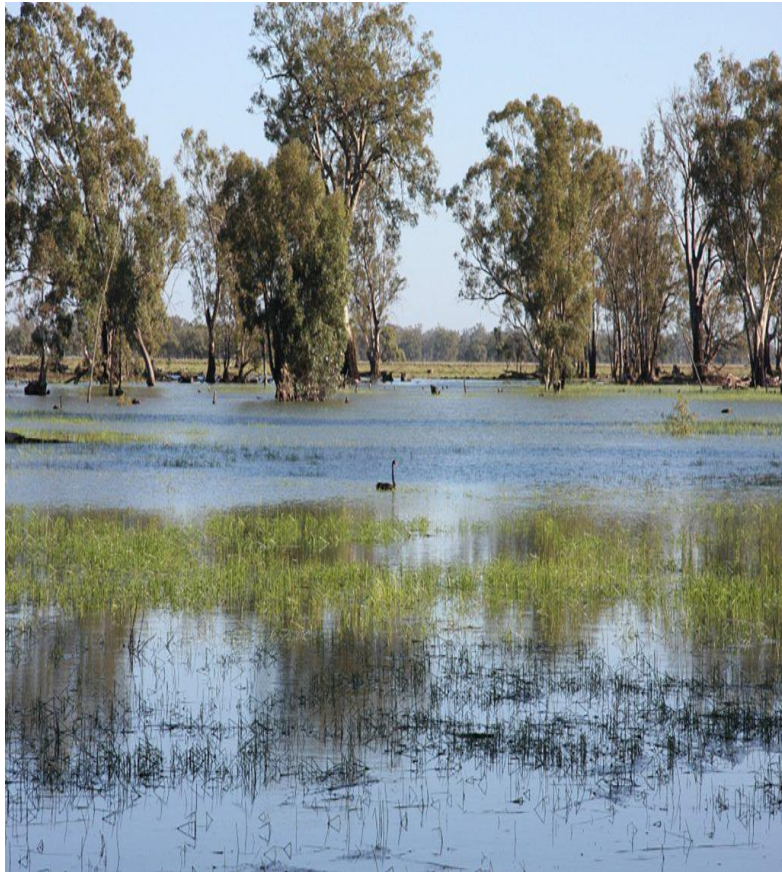
- Inner circle:** Spirit and integrity, feeling whole as a person in both worlds. 
- 5 Bricks:** Our needs to be able to work with people from other communities and our facilitators so that we can learn, is built in us. Then we can carry learnings to our community when we deliver education and improve our clinical skills. 
- Blank bricks:** Steps it takes to achieve each principle and two-way teaching philosophy. This may be different for each training, so need time and continuous reflection and action, as needed. 
- Double squiggly lines:** Making ways, travelling to and from our home communities for training. 
- Spear & spear head:** When we return to our home, spears represent being strong, empowered and having knowledge to educate our people. 
- Bigger outer circle:** Represents our holistic being, whole country, and people. The circle is known to be a person's body parts and be whole. 



Process model to develop culturally safe training, adapted from cultural safety frameworks [24, 45] and Maslow's hierarchy [59]

Implementation

Flow-MER



Native Grains



**Native grains
harvest festival**

*Healthy Country,
Healthy People*



Lessons for International Source to Sea



Our research is showing that real sustainable water resource management must consider and include the needs of vulnerable people and ecosystems, especially in a changing world.

To achieve this, those most at-risk must be key stakeholders across all parts of the water resources management process.

