



# Project Highlights



## TRANSLATING YANNARUMI INTO WATER RESOURCE RISK ASSESSMENTS

*Internationally recognised research with significant implications for the water planning sector in Australia and further afield*

Ground-breaking research has translated the Ngarrindjeri approach to risk assessment called “Yannarumi” and has connecting it to existing South Australian water resource risk assessments.

The research has facilitated collaboration between the Ngarrindjeri nation and the State government of South Australia leading to a greater ability to integrate First Nations values and interests into water planning and management.

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### KEY FINDINGS

The project team developed and tested a methodology that enabled the translation of Ngarrindjeri Yannarumi decision-making and assessment methodologies into existing water resource planning risk assessments. The methodology articulated the points of connection between the Ngarrindjeri Yannarumi assessment process and DEW’s Risk Management Framework for Water Planning and Management. The project developed proposed changes to the Risk Management Framework for Water Planning and Management that includes a new multi-layered category of ‘Risk to First Nations’. Crucially this category takes into account the quality of the relationship between First Nations and non-Indigenous governments. This is intended to inform future adaptations to the risk management framework and associated practices to support the integration of Indigenous values and interests. It extended and intensified a working relationship between non-Indigenous water planners and NRM risk assessors, and Ngarrindjeri leaders and water specialists. A First Nations Engagement Guideline was also developed, supporting the implementation of the modified risk management framework. The researchers argue that this Guideline has value in broader Indigenous nation and government interactions in natural resource management (NRM) and across other sectors.

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### PROJECT TEAM

**Lead:** Associate Professor Steve Hemming (University of Technology Sydney, formerly of Flinders University)

**Team:** Professor Daryle Rigney, (University of Technology Sydney, formerly of Flinders University), Lachlan Sutherland (DEW Project lead), Grant Rigney (Ngarrindjeri Regional Authority & Ngarrindjeri Aboriginal Corporation), Hugh Wilson (DEW), Noelle Overdevest (DEW), and Amy Della-Sale (University of Technology Sydney)

**Project Partners:**



The Goyder Institute for Water Research is a collaborative partnership of the South Australian Government through the Department for Environment and Water, CSIRO, Flinders University, the University of Adelaide and the University of South Australia.

## IMPACT

**Successful contributions to policy change in water planning risk assessment.** The project addressed a major gap in the state’s water planning capacity and a gap that is common across the Australian water planning sector: the ability of risk assessment to take into account First Nations values and interests – in particular the risks to relationship between First Nations, First Nations and the state and First Nations and their relationships to Country.

**Advances in the recognition of Indigenous knowledge.** Collaboration between the Ngarrindjeri Nation, DEW and university-based researchers was strengthened with Indigenous researchers taking leading roles. The final report’s international Indigenous peer reviewers made the comment that this project is of international significance and a recent publication emerging from this research has received an award for excellence – The *Eric Anderson Award*. The project brought Ngarrindjeri cultural knowledge into play with non-Indigenous knowledge. Ngarrindjeri knowledge was specifically protected by a Cultural Knowledge Agreement (Water Planning).

**Capacity building and development of specific tools to enhance water management.** The project provided specific input into water planning risk assessment processes and procedures. Several workshops were staged as a key part of the project and the project itself was embedded in DEW committees and project work. Capacity of DEW water planners and other DEW employees has been increased through participation in project team research, workshops, meetings and seminars. Indigenous nation researchers and university-based researchers have increased their knowledge of international and nation water planning practice.

**Relationships between First Nations and the modern Australian state.** Importantly, this research was initiated during a period where the South Australian Government started Indigenous Treaty negotiations and its methodology and innovations align with what would be expected in a treaty relationship between First Nations and the settler-state.

### NGARRINDJERI VISION FOR COUNTRY

Our Lands, Our Waters, Our People, All Living Things are connected.

We implore people to respect our Ruwe (Country) as it was created in the Kaldowinyeri (the Creation).

We long for sparkling, clean waters, healthy land and people and all living things.

We long for the Yarlumar-Ruwe (Sea Country) of our ancestors.

Our vision is all people Caring, Sharing, Knowing and Respecting the lands, the waters and all living things.

*(Ngarrindjeri Nation 2006, p. 5).*

### WHAT IS NGARRINDJERI YANNARUMI?

Yannarumi – meaning speaking as country – is a Ngarrindjeri process of decision making and assessment. This process has been adapted to enable the NRA to assess the lawfulness and life[-]giving elements of contemporary issues, including the health of Country according to Ngarrindjeri principles...

The Yannarumi Assessment will continue to be refined so as to provide the NRA with a culturally appropriate framework to develop and engage in programs, including Murray-Darling Basin Plan implementation and Ramsar Management Plan development.

*(Excerpt from DEWNR and NRA 2016 KNYA Taskforce Annual Report 2014-2015, p. 2)*

## RESEARCH CONDUCTED WITHIN THE CONTEXT OF NGARRINDJERI ENGAGEMENT IN CO-MANAGEMENT OF THE COORONG, LOWER LAKES AND MURRAY MOUTH

For decades Ngarrindjeri leaders and their supporters have challenged and partnered with the South Australian Government, including its natural resource management (NRM) representatives, over questions of justice, agency, sovereignty and the decolonisation of existing and long-standing relationships. There has been extended Ngarrindjeri participation in Commonwealth funded programs designed to address the catastrophic consequences of the Murray-Darling Basin’s (MDB) Millenium Drought (2001-2009). After lengthy negotiations with the South Australian Government – producing a whole-of-government Kungun Ngarrindjeri Yunnan Agreement (KNYA – Listen to Ngarrindjeri Speaking) –

Ngarrindjeri led the development of the Coorong, Lower Lakes and Murray Mouth (CLLMM) Ngarrindjeri Partnerships and Murrundi (Riverine) Recovery Projects (2009-2017) designed to build resilience to climate change and overextraction. In 2015, the Ngarrindjeri Nation in concert with the South Australian Government, won the Australian Riverprize for best practice in river management, after developing and leading a comprehensive co-management strategy for the CLLMM and Mid-Murray regions. This collaborative research project, 'Translating Yannerumi into water resource risk', represents an important refinement and application of this work.

Importantly, the project was identified as a direct response to the Commonwealth Murray-Darling Basin Plan (2012) requirement that Basin states, including South Australia, must meaningfully engage First Nations in the development of Water Resource Plans (WRPs). This includes identifying First Nation's goals and objectives for the management of water resources and to have regard for Indigenous cultural values and uses. Basin States are utilising risk assessments to frame the development of the WRPs. The Department for Environment and Water (DEW) had no effective process to assess risks to Indigenous values and interests.<sup>3</sup> This impacted on the state's ability to develop strategies to minimise these risks. This remains a significant policy gap for all Basin states. This Goyder Institute project was identified as a priority by DEW and was named in the South Australian River Murray Water Resource Plan 2019 as a key research project designed to address the policy gap.

## HOW WAS THE PROJECT CARRIED OUT?

The project methodology prioritised 'two-way' learning between DEW and Ngarrindjeri to investigate potential adaptation of DEW's existing water risk assessment process, based on the AS/NZS ISO31000:2009 standard. Two-way learning and co-development occurred through a series of workshops and regular project team meetings. The overarching *Cultural Knowledge Agreement – Water Planning* provided a safe context to share knowledge and experiences and to co-develop solutions and new methodologies. Workshop participants were drawn from DEW, other State and Commonwealth agencies involved in water planning and management, the Ngarrindjeri Nation, Ngarrindjeri Jawun partners and the university researchers.

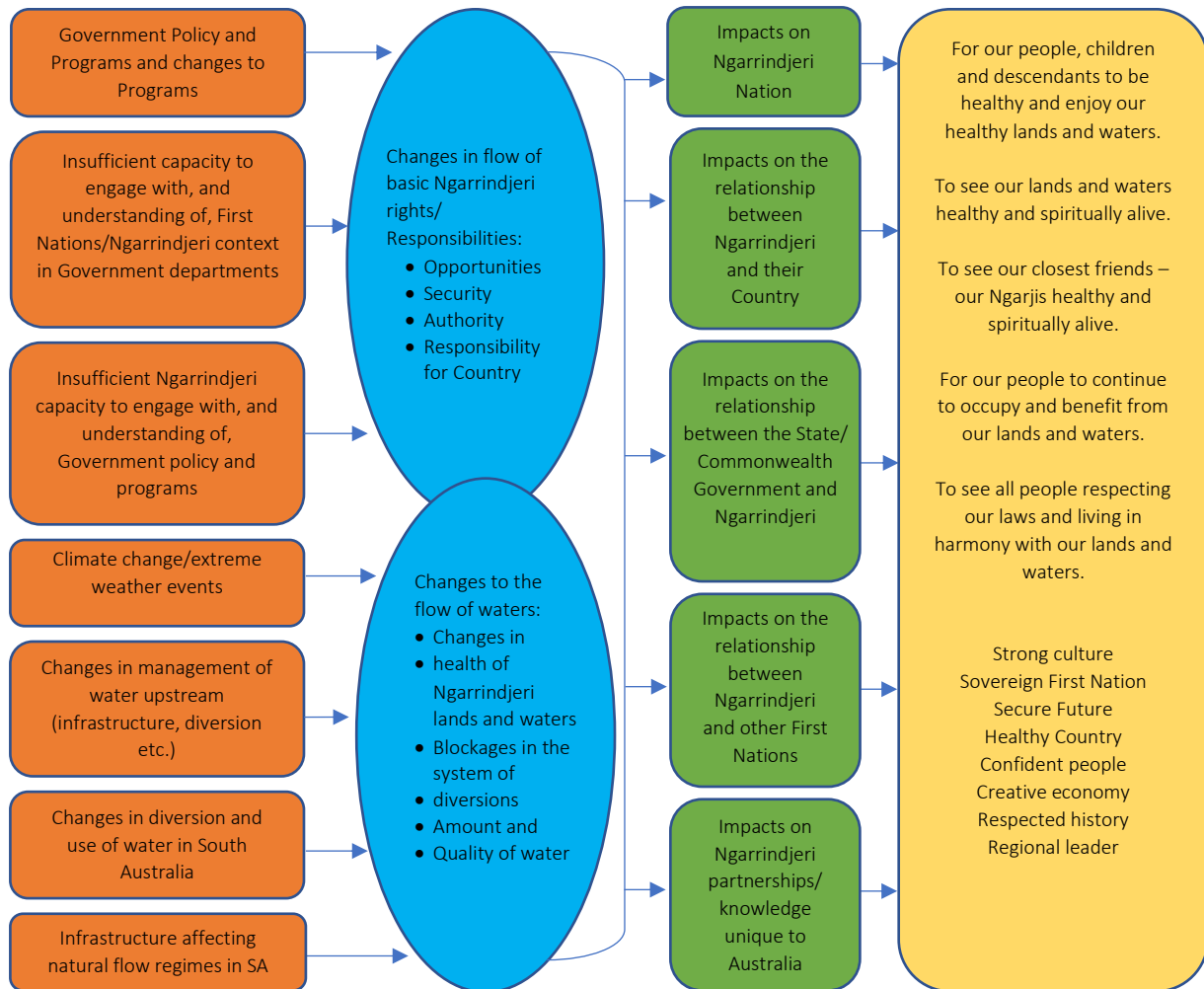
In the first phase of the project a methodology was developed and tested that supported the translation and connection of Ngarrindjeri Yannerumi assessments into water resource planning risk assessment. Bow-tie analysis involving the creation of a visual tool referred to as the bow-tie diagram (Diagram 1) is used by DEW water planners to aid in risk identification and analysis. The project team decided that this method, along with workshops, meetings and comparative risk analysis (CRC) provided a suitable approach for creating an understandable connection with the Ngarrindjeri Yannerumi approach.

## SOME OF THE KEY PROJECT ACHIEVEMENTS

1. **A new translating mechanism** – The methodology to translate Ngarrindjeri Yannerumi assessment into water resource risk assessment is best summarised in Diagram 1. The diagram summarises an assessment undertaken by Ngarrindjeri and the Department for Environment and Water (DEW) in late 2019. The diagram integrates Ngarrindjeri cultural knowledge, applies a Yannerumi assessment methodology and remains the property of the Ngarrindjeri Nation. The diagram is being shared to communicate and demonstrate the inclusion of a new category of risk in the DEW Risk Management Framework: Risks to First Nations peoples. Other First Nations may view risks to Country in different ways.
2. **Significant policy changes.** The new methodology produced recommended changes to the *DEW Risk Management Framework for Water Planning and Management* and a draft *First Nations Engagement Guideline*. These recommendations and new policy instruments have broader application value to the engagement of other First Nations in water planning risk assessment. A key policy change related to the inclusion of a new category of risk '*Risks to First Nations peoples*', including the following sub-categories:
  - Risks to First Nations and their Country;
  - Risks to First Nations relationships with their Country;
  - Risks to relationships between First Nations;
  - Risks to First Nations relationships with government, including loss of partnerships and knowledge unique to

Australia.

3. **A Ngarrindjeri risk assessment of connected water sources in the River Murray region.** This process of translation and connection produced the new category of risks to First Nations peoples essential to creating the link to Ngarrindjeri nation's goals and objectives. Ngarrindjeri categories of risk were developed and applied to assessments of several specific sources of risk. The resulting Risk Register is held by DEW and is jointly Ngarrindjeri/DEW owned.



*Diagram 1. Bow-tie diagram for the assessment of risks to Ngarrindjeri objectives and outcomes related to water resource management.*

## WHY IS THE RESEARCH SIGNIFICANT IN AUSTRALIA AND INTERNATIONALLY?

The Murray-Darling Basin Plan (2012) requires Australian Basin States to take into account risks to Indigenous values and uses associated with water. This Goyder Institute research has developed a workable and socially just methodology for conducting water resource risk assessments that more effectively brings together Indigenous leaders, scientists and water planners. This has required collaboration between University-based researchers, Ngarrindjeri researchers, water planners and natural resource management specialists to translate and connect Indigenous risk assessment to existing water planning risk assessment. The research relied on a long-term partnership between the Department for Environment and Water (DEW), the Ngarrindjeri Nation, the Goyder Institute for Water Research and university-based researchers (initially at Flinders University and more recently at the University of Technology Sydney). This project was both multidisciplinary and interdisciplinary, but most importantly was successful because of strong Indigenous leadership and DEW's commitment to policy improvement. It relied on several decades of negotiations and partnerships between the Ngarrindjeri Nation and the State of South Australia. These interactions produced a series of award-winning innovations in NRM including formal agreements and risk management tools that provided the translation and connecting methodologies used in this project to significantly modify DEW's existing Risk Management Framework for Water Planning and Management

The Goyder Institute Yannarumi project has translated Ngarrindjeri risk assessment, connected it to existing South Australian water resource risk assessment and produced a new method for the identification of risks to First Nations in water planning and management. These outcomes have direct implications for the important challenges in the Murray-Darling Basin to improving the long-term management of this crucial Australian River system. It is hoped that the outcomes of this project will enable First Nations to more effectively include their priorities, values and uses in the ongoing care for river systems and water management more generally. A crucial element of the improved engagement strategy was the development of a set of First Nations Engagement Guidelines that should also have broader applicability to improved planning relationships between First Nations and non-Indigenous parties. We hope that this research makes an important contribution to improving Indigenous wellbeing, increasing Indigenous self-determination and moving towards a just relationship between First Nations and the Australian State.

Ngarrindjeri Yannarumi has equivalences amongst Indigenous nations internationally and it can be understood as a form of 'Indigenous Environmental Studies and Sciences'. Internationally-renowned Indigenous scholar Kyle Powys Whyte (2018, p. 138) argues that:

Indigenous Environmental Studies and Sciences (IESS) is an emerging field that centers Indigenous historical heritages, living intellectual traditions, research approaches, education practices, and political advocacy to investigate how humans can live respectfully within dynamic ecosystems.

This project has taken seriously calls for assessments of risk to the ecological health of non-Indigenous management entities, such as 'connected water sources', to take into account political, legal, human rights and justice issues. In western settler democracies such as Australia, New Zealand, the USA and Canada, principles and commitments from international treaties such as the United Nations Declaration on the Rights of Indigenous Peoples (2007) should be important reference points for the risk assessments that underpin new policies and new plans.

The project team argues that Ngarrindjeri Yannarumi has provided a form of engagement and assessment that has been mutually enriching, enabling Indigenous philosophies and ways of being to inform new non-Indigenous understandings that better respond to the health needs of both people and environment, and so translate to more effective policy solutions. This resulted in an enrichment of conceptual and scientific understanding for both Indigenous and non-Indigenous participants, who have begun to develop a new understanding of where cross-cultural philosophical synergies lie and may be utilized for maximum mutual benefit. Creative indigenous resilience is interwoven with the health of many internationally recognised river systems and wetlands and this complex relationship has continued for many thousands of years. This Goyder Institute project is important evidence of this Indigenous resilience and creative agency, often undervalued, misunderstood or absent from international NRM literature.

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## RECOMMENDED NEXT STEPS

The following recommendations include specific ideas for improvements to water resource risk assessment and management. They also contain more general recommendations required to increase Indigenous self-determination and agency in Australian water and NRM planning. We recommend that:

1. DEW's First Nations Engagement Guidelines be applied across DEW programs and in other relevant SA Government sectors;
2. Where possible risk assessments (and research projects) adopt a collaborative engaged model to more effectively support policy change and co-education;
3. Policy and planning align with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and other international treaties and protocols;
4. Utilise the UNDRIP as a framework for developing risk criteria;

5. The new category of risk identified by this project should be considered for adoption in water planning risk assessment in South Australia, and more broadly in Australia;
6. Indigenous nations should be supported to continue their unique roles in the reproduction of healthy rivers systems. This principle should be prioritised as a critical and socially just component of ‘wise-use’ and a test of responsible management;
7. Indigenous people need to be recognised as experts in risk assessment and the mechanisms for engagement with this expertise should be formalised through agreements with First Nations;
8. Formal protection for First Nation knowledge should be prioritised;
9. The water resource risk assessment methodologies developed in this project should be trialled in other parts of the Murray-Darling Basin;
10. The Goyder Institute consider changes to its management structure to support improved engagement with First Nations and a greater capacity to manage, assess and support Indigenous research from across the sciences, humanities and social sciences;
11. And, the former South Australian Aboriginal Regional Authorities policy and the KNYA taskforce engagement model should be valued for their contributions to Indigenous capacity building, respectful relations and innovations in natural resource management.

## FOR MORE INFORMATION

The following technical report associated with the research program is available at [Reports – Goyder Institute](#) :

- Hemming S., and Rigney D. (2016) Restoring Murray Futures: Incorporating Indigenous knowledge, values and interests into environmental water planning in the Coorong and Lakes Alexandrina and Albert Ramsar Wetland. Goyder Institute for Water Research Technical Report Series No. 16/8, Adelaide, South Australia. ISSN: 1839-2725
- Hemming S, Rigney D, Rigney G, Sutherland L, Wilson H, Overdeest N, Della-Sale A, and Maxwell S, 2020. Translating Ngarrindjeri Yannarumi into water resource risk assessments. Goyder Institute for Water Research Technical Report Series No. 20/09, Adelaide, South Australia. ISSN: 1839-2725 (report without appendices)

Refereed Journal articles:

- Hemming, S, Rigney, D, Bignall, S, and Rigney, G (2019) Indigenous nation building for environmental futures: Murrundi flows through Ngarrindjeri country, *Australasian Journal of Environmental Management*, 26:3, 216-235, doi: 10.1080/14486563.2019.1651227
- Muller, S, Hemming, S and Rigney, D (2019) Indigenous sovereignties: relational ontologies and environmental management, *Geographical Research*, 1-12. doi:10.1111/1745-5871.12362
- Hemming, S, Rigney, D, Muller, S, Rigney, G and Campbell, I (2017) Indigenous nation building. A new direction for water planning? in Special Edition, *Sustainably managing fresh water resources*, *Journal of Ecology and Society*, 22(2):13. doi:10.5751/ES-08982-220213

Books chapters:

- Mosely, L, Ye, Q, Shepherd, S, Hemming, S and Fitzpatrick, R Ed. (2019) *Natural History of the Coorong, Lower Lakes, and Murray Mouth Region (Yarluwar-Ruwe)*, Natural History Series, Royal Society of South Australia Inc., Adelaide University Press, Adelaide, SA. DOI: <https://doi.org/10.20851/natural-history-cllmm>.

