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ORATION



'Martuwarra Fitzroy River Catchment – sustainable lifeways and livelihoods'

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ABSTRACT

This Oration is presented from the perspective of a woman belonging to Martuwarra, the Fitzroy River in the remote Kimberley region of Western Australia. The narrative introduces both the Martuwarra Fitzroy River Council and the Martuwarra Fitzroy River within this region. As the storyteller, she reclaims water narrative to articulate her insider worldview, values, and ethics, emphasising a holistic understanding where land, water, and people are intrinsically interconnected, rather than managed as separate entities. She contextualise colonialism within an ongoing meta-crisis, offering pathways to shift colonial perspectives on water policy, law, and integrated and adaptive management. Climate change is introduced as a concern at national and global levels, underscoring the importance of embracing opportunities for climate action. In Australia, we are learning to decolonise our thinking and practices regarding climate issues, acknowledging their impacts on ourselves, our communities, and broader national and international contexts. The concept of law as a transtemporal obligation is referenced as a mechanism to promote justice, equity, and the greater good. The conclusion calls the audience and the nation to stand with the Martuwarra Council in advocating for our collective human right to live free from harm, as has been practiced for thousands of years.

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1. Preamble

On 26 November 2025, I delivered the 2025 Munro Oration at the *Hydrology and Water Resources Symposium* (HWRS), an event that honours the distinguished water leader Crawford Munro. At each HWRS, a recognised expert in hydrology and water resources presents the Oration. I include (Figure 1) the art of Lloyd Kwilla a Master Indigenous Artist who is a distinguished water

leader to show his wisdom and practice in painting the connectivity between all living creatures and Martuwarra, Fitzroy River.

Crawford Munro (1904–1976) is best remembered for bringing greater visibility to hydrology in Australia, which allowed many other hydrologists to thrive and contribute to the global practice of hydrology. Notably, Munro established the hydrology program at the University of New South Wales, founded the Water Research Foundation Australia, and helped create what would become the School of Civil and Environmental Engineering at UNSW. He also authored and edited the original Australian Rainfall and Runoff (ARR), the leading design guideline for engineering hydrology throughout Australia, now in its fourth edition and available online at <http://arr.ga.gov.au/>. This legacy is why Crawford Munro is celebrated with the biennial Crawford Munro Oration at the Hydrology and Water Resources Symposium, organised by the Institution.

The Munro Oration is sponsored collectively by Engineers Australia, the Canberra Hydrological Society, and the South Australian Hydrology Society. First presented in 1978, it was established to honour Crawford Munro's groundbreaking contributions.



Figure 1. (Martuwarra country a life force). (Lloyd Kwilla – Artist).

2. Introduction

2.1. *Ngayoo Yi-Martuwarra Marnin*

In my Nyikina language, I am identified as a woman belonging to Martuwarra (the Fitzroy River) in Western Australia's Kimberley region. The River owns me, I am guided by the Martuwarra Fitzroy River Council – a group of elders and young leaders dedicated to water management and cultural governance, as published in *The Conversation* <http://theconversation.com/new-river-council-will-give-traditional-owners-in-the-kimberley-a-unified-voice-98390> (Laborde and Jackson 2018). The goal is to restore First Law regional governance for effective biocultural management, unifying the area to protect the River. The Council encourages healing and empowerment beyond colonialism. As such, I am morally obligated to defend the Rivers' right to live and flow.

Professor Katherine Daniell invited me to deliver the 2025 Munro Oration, prompting me to shift from questioning 'why me?' to embracing 'why not?'. The reason being Australia's independent Traditional Owner nations have always managed rivers, lakes, billabongs, and groundwater springs collaboratively. West Kimberley Traditional Owner leaders reflect a holistic philosophy where land, people and water are inseparable (RiverOfLife et al. 2020). My Indigenous perspective centres on balance and harmony among all beings, human and non-human, each with the right to fulfil their potential. Notably, Professor Daniell and Professor Moggridge (as special issue editor) recognised Martuwarra RiverOfLife as first author; Martuwarra now has an ORCID: <https://orcid.org/0009-0009-1403-unciteclass=unciteRefText>2963uncite>.

I put the proposition to the audience of water leaders, on the need to shift from top-down management to community-led governance that benefits both humans and non-humans. This involves recognising

the importance of water before altering its course and emphasising our shared responsibility to care for living waters (Taylor et al. 2026). Integrating Indigenous knowledge into sustainability practices is essential for holistic ecological stewardship, especially regarding water infrastructure or diversion (RiverOfLife, Carracher, and Poelina 2025). Indigenous communities such as the Martuwarra Council have turned these platforms into opportunities to promote our rights, responsibilities, and duty to care.

To enhance the Oration, I have included a photo of the Martuwarra Council and friends of Martuwarra (Figure 2) to show the collective wisdom of those who guide our publications from past and present that centre on an ethics of care, encouraging the audience to reflect on the Oration and consider our direction in reclaiming water stories at both national and global levels. This includes recognising the ancient wisdom, governance and how this strengthens our contemporary lived experiences as enduring guardians of our heritage and sources of life (Turnbull and Poelina 2022). Equally important are the contributions of research partners who are working to reclaim and share methods for achieving sustainable development and affirming the right for living waters to exist and flow freely.

In preparing this Oration into a publication, I noted a recent study conducted a systematic review of Indigenous peoples' participation in dominant system of water and found that Indigenous water rights and responsibilities are frequently overlooked by colonial governance systems. The researchers identified Indigenous involvement as crucial for inclusive water management; however, most processes fail to effectively integrate Indigenous knowledge and values. Their study showed that when mainstream systems do not offer meaningful engagement, Indigenous peoples actively establish their own avenues for



Figure 2. Martuwarra Fitzroy River Council & friends of Martuwarra. (Photo – Ian Bool).

participation. Researchers recognised that global forums and cross-border governance frequently disregard Indigenous perspectives. Their study recommended greater inclusion of Indigenous peoples in water governance, stressing their rights to self-determination and the integration of their values into decision-making. Future research should assess participatory processes and examine Indigenous involvement at various levels (Kasuri, Watkins, and Collins 2026). It is time for all of us particularly Indigenous water leaders to reclaim our water stories.

3. Reclaim water storytelling

The Oration was an opportunity to revisit, reshape and reclaim the universal *Water Story*. While not an eminent hydrologist, I approach water as a leader focused on better stewardship of this vital life force and, resource. My lived experiences have strengthened my ability to learn, unlearn and adapt. I believe collective wisdom is essential to balance competing interests in energy, infrastructure, land, water, economy, environment, and politics (Poelina 2020).

My personal journey began growing up on the banks of Martuwarra with my family, leading to the last thirty years spent living on Country. More recently, I've served as Chair of the Martuwarra Council for five years, working closely with West Kimberley Traditional Owners. Professionally, I started in water management through the Western Australian Aboriginal Water Advisory Group, during this time I took up the offer to complete the requirements to become a Peter Cullen Fellow (2011). I was the first Indigenous member appointed to the Murray Darling Basin (MDB) independent Advisory Committee on Social, Economic and Environmental Sciences, and later was named Joint Commissioner for the Productivity Commission National Water Initiative, 2025. A key lesson learned has been the lack of trust capital in recognising how leadership and governance shape the management of land, water, and communities on a broad scale.

My colleague, Shann Turnbull discusses the opportunity to sustain business, the environment, and humanity on a broad scale through a bioregional citizen's model governed by nature. Bioregional governance led by local people to enhance sustainability and well-being. He outlines how ecological corporations can protect the environment while fostering local economies with the emphasis is on the need for a shift in corporate governance to protect democracy and promote equity. He makes the case for a better understanding of the challenges in conservation and existential risks, in order to avoid catastrophic future scenarios (Turnbull 2025). Citing our work on Indigenous knowledge to provide valuable insights for protecting humanity and addressing contemporary

challenges. Indigenous wisdom is highlighted as a potential solution for safeguarding humanity, his call is for radical reform in corporate governance to enhance ethical practices and stakeholder engagement (Turnbull and Poelina 2022).

I spoke to how we as diverse Kimberley Traditional Owner nations came together under the Law which travelled from the Hill/Ranges from the Sunrise Country to the Coast the Sundown Country with place based biocultural arrangement and governed as a regional block to care for Country and Living Waters on the principle of bioregionalism. I referred to the Commonwealth Government's sustainable bioregional framework – mapping Australia into 89 bioregions and 419 subregions and how Martuwarra Council we are exploring its application in the Martuwarra catchment of the Kimberley region. Australia is divided into 89 bioregions and 419 subregions, each comprising land areas formed by groups of interacting ecosystems that occur in similar patterns across the landscape <https://www.dcceew.gov.au/environment/land/nrs/science/ibra/australias-bioregion-framework>.

I shared my approach was to focus away from control or intervention, rather, my water engineering perspective centres on sustainability through ongoing collaboration with Country and non-human kin. This presentation shifted away from viewing water as a commodity defined by data or markets, and instead highlighted community voices, land-based resistance, and Indigenous philosophies – framing water as teacher, relative, and lawmaker.

At the start of the Oration, I showed short films about a major water engineering project in my Country: the Camballin Barrage and 17 Mile Dam, the only manmade barriers to the Martuwarra Fitzroy River. The State government began investing in the Camballin irrigation scheme in the 1950s, with construction in the 1960s. This large-scale rice venture was the first to fail in Western Australia. Local Indigenous elders warned the state government and developers that the land being cleared was on a migratory bird pathway. Ignoring these warnings led to crops being destroyed by birds heading to Roebuck Bay a rich RAMSAR Wetlands, resulting in no grain exports from Broome or Derby ports. The scheme was discontinued in the 1980s due to repeated failures, including floods, pests, and weeds that caused ongoing financial losses. Decaying infrastructure still exists on Martuwarra's main channel and sub-channel, remains owned by the WA government, and continues to disrupt vital ecological processes for rare and endangered species (RiverOflife, Carracher, and Poelina 2025).

Upon reflection, the opportunity for water leaders to convene for the 'Munro Oration' invites us, as Australian scientists, to critically examine whose future we are safeguarding and whose may be

inadvertently overlooked. Effective solutions must acknowledge deep historical injustices rather than relying solely on superficial collaboration. Diplomacy is underpinned by mutual respect, which requires the establishment of meaningful relationships, the cultivation of trust, and responsible action towards current and future generations. In this context, I advocated for inclusive regional dialogue, emphasising the importance of engaging all stakeholders, especially in an era where critical water sources are diminishing and essential systems sustaining our ways of life are shifting (Taylor et al. 2026).

Colleagues from the ANU Water Justice Hub and I describe how these systems are changing as a ‘fierce tussle over water in the Northern Territory revealing Australia’s stark choice on water justice’ (Grafton, Poelina, and Milne 2025), see <https://theconversation.com/a-fierce-tussle-over-a-northern-territory-river-reveals-australias-stark-choice-on-water-justice-248766>. Six months after our article Traditional Owners in the Northern Territory have appealed to the High Court of Australia to overturn one of Australia’s largest groundwater licences, for further information please see <https://www.abc.net.au/news/unciteclass='unciteRefText'>2026-02</uncite > -10/nt-high-court-singleton-station-aboriginal-groundwater-rights/106322626>.

A comprehensive understanding of existing threats is essential for devising strategies that address both climate and water justice. Importantly to consider the true and continuing value of globally unique cultural landscapes before we destroy them. I introduced the concept of ‘Ecological Engineering as Nature’s Infrastructure’, underscoring the responsibility of engineers and hydrologists to extend their stewardship. As professionals devoted to critical analysis and action, it remains imperative to assess the value and purpose of ecological living water systems prior to implementing changes. There is, I believe, a growing recognition among hydrologists and engineers of the importance of integrating nature-based engineered solutions.

4. Martuwarra River: a living ancestral – a nature-based solution!

Martuwarra (the Fitzroy River) is a vital living system in Western Australia’s Kimberley region, spanning 93,829 square kilometres. The Martuwarra Fitzroy River is recognised as seen in (Figure 3) as a Living ancestor, our guardian, the ‘River of Life’ responsible for its rich cultural and ecological heritage, essential for the well-being of Indigenous communities and the wellbeing of all Kimberley people, families and communities:



Figure 3. Living ancestor – Martuwarra. Lloyd Kwilla (Artist).

- It is Australia’s longest registered Aboriginal Cultural Heritage Site and is National Heritage listed.
- The River supports endangered species and is vital for the cultural practices of Indigenous nations.
- The health of the River is crucial for the welfare of Indigenous communities and their intergenerational obligations to care for Country (RiverOfLife, Carracher, and Poelina 2025).

It embodies Indigenous law, ethics, and sustainable governance, with traditional knowledge guiding management for thousands of years through First Law. Recognised as a living entity, Martuwarra promotes peace, harmony, and balance (RiverOfLife et al. 2021; RiverOfLife et al. 2023). Current nature and climate initiatives are focused on protecting and restoring ecosystems for climate adaptation and mitigation, using approaches such as nature-based solutions (NbS) and ecosystem-based adaptation (EbA). These efforts aim to tackle social, economic, and environmental challenges effectively through a holistic approach (Lo et al. 2026).

My presentation featured a clip from the television series *The Kimberley* presented by Mark Coles Smith (2025) to showcase an outstanding example of remote regional natural ecological engineering. The Kimberley is a place of remarkable beauty, sustainably cared for by its Traditional Owners since ancient times, and it cannot be found anywhere else on Earth see, <https://iview.abc.net.au/show/kimberley>. There is increasing support for alternative economies like the UNESCO Living Water Heritage Museum, see www.livingwaterheritage.org. Additionally, Mark Coles Smith, who narrated *The Kimberley* series, was nominated and won the *REAL International Award* (2026) for best global presenter in a nature-based

documentary. This highlights the region's potential as a natural infrastructure for what I refer to as the Forever Economies or Economics of Wellbeing (<https://stories.acf.org.au/forging-the-forever-industries>). As we develop new industries, it is essential that the ancient wisdom embodied in First Law and governance leads the transition towards these new economies (RiverOflife, Taylor, and Poelina 2021).

I shared this series to highlight ways of enriching technical expertise. The audience listened and learned about ancient perspectives that treat water and rivers as living systems. I encouraged them to view engineering as an attentive practice informed by seasonal knowledge, kinship, and reciprocity, and to connect with the land through observation and listening (Poelina and Carracher 2025). 'The Kimberley' imagery and storytelling helped shift focus from technical design to relational repair. My invitation to speak was dialogic, incorporating diverse voices, especially Martuwarra Country (Poelina and Carracher 2025). I aimed to prompt engineers and hydrologists to connect their expertise with building relationships with the land, water, and Indigenous people. Many in the audience were already working towards meaningful dialogue and collaborative infrastructure projects with Traditional Owners.

Martuwarra River catchment is recognised as a vital Indigenous cultural landscape with deep ancestral connections. It is the world's first 'Living Water Heritage Museum' recognised by UNESCO and nationally heritage listed since 2011. The River is a living ancestral being, embodying the Rainbow Serpent tradition spanning 96,000 km² and contains thousands of tangible and intangible heritage sites (RiverOflife et al. 2025). Martuwarra faces ongoing water extraction proposals, including plans to remove fossil water from ancient groundwater systems. To date no engineer or hydrologist can verify government estimates of underground water volume. Elders call this 'fossil water' 'old' water, understanding it takes millennia to recharge. They continue to sing about these sacred, interconnected systems as *living water*, viewing them as a vital force rather than merely a resource (RiverOflife et al. 2026).

Water is an essential resource, fundamental to sustaining life for humans and all living beings on Earth. Its availability has become increasingly limited both in our region and globally from a planetary perspective we are described as water bankrupt and are 'living beyond our hydrological means in the Post-Crisis Era' (Madani 2026). It is imperative that water be recognised as a critical asset, not merely as an economic commodity. Recent reports indicate that the neighbouring Pilbara region has experienced significant dewatering, which is concerning given that we share the Canning Basin – a single hydrological system covering 500,000 km² onshore and an additional

100,000 km² offshore. Moreover, similar extractive industries, which have contributed to dewatering in the Pilbara, are proposed for the Kimberley region. Addressing these challenges requires fostering trust and collaboration between government entities and Kimberley communities (RiverOflife, Carracher, and Poelina 2025).

5. Contextualising colonisation

In the context of colonisation, Magali McDuffie a close friend and colleague completed her doctoral thesis which provides a historical perspective of the colonisation and invasion of 'Martuwarra Country' people, living waters and brings home the question of how many times can we be colonised and invaded? (RiverOflife, McDuffie, and Poelina 2020). The Kimberley in Western Australia is our home, marketed as a new development frontier, with water licences freely given to wealthy developers despite the absence of water trading or water markets. The reality in 2026 is most of our Aboriginal families and communities do not have water fit for human consumption. Water is life and human beings need it to have a healthy life, authors continue to paint the picture of the growing disadvantage and the widening gap of Aboriginal families and communities, suffering with multiple dis-ease (Lansbury Hall and Crosby 2022). Local perceptions of fairness, justice and equity mask unjust development. This reflects ongoing colonial water governance issues and highlights a broader crisis. A pathway to a meta-crisis which is being legitimised through the Western Australian government to make the decision through the Environmental Protection Authority (EPA) to fracture 'The Kimberley'. This meta-crisis reflects the illusion of probity which continues to follow colonial-era structures, politics, and logic. A meta-crisis with characteristics of colonialism; 'conflict, divide and conquer, manipulation and conquest' (Freire 2017). The Martuwarra Council decolonisation intent is for peacebuilding, harmony and to find the way to understand and build 'cooperation, unity, organisation and multiple synthesis' (ibid, 2017).

We are working with fellow Australians to shape a new future; however, we must acknowledge critical truths about our shared history. Despite the legal overturning of terra nullius in 1992 via the Native Title Act, ongoing colonisation continues to affect Indigenous Australians, impacting land, water, food, and medicine insecurity and widening the gap of intergenerational disadvantage in our lives and communities (Byrne 2026). The notion of overturning aqua nullius: to secure Aboriginal water rights challenges settler-state authority over water resources (Marshall 2017). In the Kimberley region, both historic and current dispossession have lasting effects on

Traditional Owners, especially in relation to water rights and management (RiverOflife, Carracher, and Poelina 2025).

Researchers working in Northern Australia with Traditional Owners, such as Laborde and Jackson examine the transition from colonial to decolonial water governance, comparing industrialised views with Indigenous Australian concepts. They note that modern water is treated as an inert resource, while 'Living Waters' are considered sentient and relational. Their research reveals ongoing power imbalances, with Indigenous perspectives often sidelined in water management (Laborde and Jackson 2022).

Furthermore, these researchers argue that Western Australia's approach treats water primarily as a resource to be allocated for public benefit, following a modernist model. They note that while Indigenous cultural values are acknowledged in planning document, such as 'Managing water in the Fitzroy River Catchment', 24 October 2023, <https://www.wa.gov.au/service/natural-resources/water-resources/water-planning-the-fitzroy> for stakeholder consultation. Aboriginal custodians are considered stakeholders rather than decision-makers. This framework prioritises domestic, agricultural, and ecological needs, with models illustrating extraction and conservation, ultimately placing greater legal emphasis on agricultural and economic interests over Indigenous rights (Laborde and Jackson 2022). While Laborde and Jackson (2022) research suggests models for better practice to facilitate understandings, they are only partial tools in recognising limitations for future direction for addressing ontological differences in water governance, infrastructure, regulation, management (Poelina, Taylor, and Perdrisat 2019).

Senior Nyikina women Elders from the Kimberley were invited to by Laborde and Jackson to collaborate as authors noting models were abstract and did not fully reflect their lived experiences, relationships, or nature-based infrastructure. This collaboration grounded relationships in Aboriginal communities to improve understanding and respect for Indigenous perspectives. The results were profound in as these Nyikina elders informed the creation of a seasonal calendar and highlighted the value of integrating Indigenous ecological ethics from Nyikina Country into sustainability science. This approach can and do reveal gaps in current water policy and management, underscoring the need for reform. Reform to be informed by thousands of years of lived experiences learning to in peace and harmony with each other and with Country (Milgin et al. 2020).

5.1. Unfolding meta-crisis

I recall, Butcher Joe Nangan, a Nyikina elder of high degree, making the comment *'how the world of*

Nyikina people changed, when the settlers first came and cut up our lands and waters with fence lines' (Nangan and Edwards 1976). Today, the Western Australian government is considering a plan to build thousands of wells to 'cut up the land' with grid lines across our lands and waters with fracking wells, this can only be described as an unfolding meta-crisis.

As Kimberley Traditional Owners we are assessing water management strategies to protect our cultural and human rights from these types of regional projects (RiverOflife et al. 2020). We advocate for the greater good for all future approaches to integrate scientific evidence, traditional knowledge, and current experience to avoid past mistakes made in southern developments, especially regarding water planning (Dale 2014). Nationwide consensus supports strengthening environmental standards, offsets, and regulations.

On 30 January 2026, on behalf of the Martuwarra Council, I submitted our concerns to the Department of Climate Change, Energy, Environment and Water regarding the reforms to the Environmental Protection Biodiversity Conservation (EPBC Act 1999) and the proposed National Environmental Standards for Environmental Offsets. The Martuwarra Council highlighted the need for greater local community involvement and improved resource management. Council criticised the EPBC Act's top-down approach, noting it ignores local and Indigenous knowledge, and argued that economic priorities are placed above environmental protection (Poelina 2026).

Environmental assessments often favour proponents, who get ample time to prepare their cases collect and hold commercial in confidence data, while the public typically has less than three weeks to submit appeals, limiting community input and leading to poor outcomes. National reports show ongoing environmental decline in Australia, such as reduced surface water and groundwater depletion. The United Nations also highlights Australia's significant water challenges in its global report. Martuwarra Council's submission highlights Elinor Ostrom's principles as a practical alternative to the current top-down resource management approach. Ostrom's research indicates that local communities can successfully manage shared resources through adaptable, community-based rules, without relying on state or market control (Poelina 2026).

Our submission to the 2026 Matters of National Environmental Significance (MNES) (EPBC 1999 Act) confirms these changes pose challenges for Indigenous groups, especially regarding respect for elders with significant cultural knowledge. Indigenous communities should be recognised as environmental authorities, not just stakeholders:

- The proposed First Nations Standard risks disempowering Indigenous peoples by treating them as issues to be addressed.
- Professor Samuel emphasises the importance of including Indigenous knowledge in environmental legislation development.
- The UN Declaration on the Rights of Indigenous Peoples (1972) calls for free, prior, and informed consent in legislative processes affecting Indigenous communities (Poelina 2026).

Furthermore, our critique of Environmental offsets as being inadequate and potentially harmful tools for compensating environmental damage:

- Offsets are defined as compensatory measures for unavoidable impacts, but their effectiveness is often subjective and poorly assessed.
- The potential for long-term environmental damage from projects like fracking raises concerns about the adequacy of offsets.
- Strict limitations on offsets should be enforced, only allowing them in low-risk scenarios to prevent catastrophic environmental harm (Poelina 2026).

The Martuwarra Council criticises the drafting of the National Environmental Standards to be lacking clear principles and enforceable criteria, which can only lead to ineffective application. Council notes that the mitigation hierarchy is unclear and fails to set thresholds for acceptable impacts, and compensation for environmental damage is treated as an afterthought rather than being integrated into project planning. The main issue with the MNES Standard is that it may enable greater environmental harm due to vague and insufficient operational guidelines. The standards allow significant impacts if compliance is claimed, yet there is no process for evaluating the suitability of proposals. We argue that these standards lack specificity and could weaken current environmental protections, potentially worsening crises like the one projected for the Martuwarra Fitzroy River catchment (Poelina 2026). In our submission, we highlight that Indigenous Australian communities have demonstrated sustainable resource management for millennia, illustrating the value of bottom-up biocultural polycentric governance (Turnbull, Stoianoff, and Poelina 2023).

Working with Martuwarra Council, the Maboo Liyan Booroo is a consortium of university researchers collaborating with the Martuwarra River Keepers, community research practitioners to manage Indigenous cultural landscapes along the Martuwarra/Fitzroy River. Together these partners recognise a crucial aspect of addressing the unfolding meta-crisis involves identifying barriers to recognising and integrating Indigenous heritage practices into

contemporary heritage management frameworks. Collectively, they acknowledge the complexities associated with *Indigenous Cultural Landscape Management* and agree that significant obstacles exist due to conceptual, relational, and political factors (RiverOflife et al. 2025).

This research collective finds that conceptual barriers stem from heritage frameworks from the Global North that clash with Indigenous perspectives. Relational barriers arise due to power imbalances between non-Indigenous experts and Indigenous communities, resulting in exclusion from decisions. Political barriers, shaped by neo-colonial politics, further complicate matters by conflicting with Indigenous rights and movements. The article stresses the need for reciprocal care when managing cultural landscapes, especially regarding government and company actions that may perpetuate unjust development (RiverOflife et al. 2025).

The unfolding meta-crisis extractive activities proposed for the Martuwarra Fitzroy River region pose significant threats to the human rights of Kimberley people, families and communities alongside the destruction of the cultural and ecological integrity of the area. The region is targeted for mining and groundwater extraction, which can lead to environmental degradation. Extractive activities have often prompted community resistance, such as the Noonkanbah protest against Amax Petroleum in the 1980s. The recent announcement by the Western Australian Environmental Protection Authority (EPA) forty-five years later means Noonkanbah is now open to what can now be described as ‘ruthless risk taking’ particularly if the WA Minister Environment and the EPA believe they can safely install 20 exploratory wells to frack Noonkanbah and the Martuwarra catchment (Lilienthal et al. 2024).

Senior women elders from Noonkanbah who were protesting forty-five years ago to ‘stop the mining’ have made multiple films to emphasise the intersection of climate justice and water justice as crucial for addressing the impacts of climate change on Indigenous and Kimberley communities. They frame water as a human right and an Indigenous right, essential for spiritual wellbeing, cultural identity and autonomy. Working together with these elders we discussed the need for distributive, procedural, and restorative justice in water governance, making the case water justice and climate justice can’t be separated. We as fellow Australians and global citizens need to listen to community voices to facilitate participatory decision-making. In our publication, we assert fracking the Kimberley and the ongoing trend of water commercialisation threatens public interest matters, the elders urge precautionary principles to do no harm. Building on the work of the Maboo Liyan Booroo researchers we agree, we cannot view sacred sites as being isolated they are

a connected cultural landscape (RiverOflife et al. 2025). *Doodoodoo* is a sacred geothermal site where my grandmother's spirit was conceived. It is an area containing highly folded and fractured geology full of geothermal energy, where the six sacred sites of *Dangaba* as mound springs are all connected underground. Of great importance to these elders, is their *duty to care for the neighbours, the birds, the trees, the fish all life, having the right to life free from harm* (RiverOflife et al. 2026).

Our article published in 'The Conversation', 10 February 2026 (<https://theconversation.com/if-fracking-begins-in-the-kimberley-it-could-damage-a-sacred-river-274631>), highlights the complex nature of recent developments and their impact on both the Martuwarra catchment and human health (Haswell, Cortes-Ramirez, and Woodward 2026; Haswell, Poelina, and Shearman 2026). We reference the approximately 8000 submissions made to the Minister for the Environment regarding the consideration of fracking in the Kimberley, which indicate an emerging meta-crisis. This situation presents an opportunity for the people of Kimberley, as well as state, national, and global stakeholders, to engage with Indigenous knowledge and reconsider their relationship with the region. The WA submissions to the Minister for the Environment, and the Environmental Protection Authority (EPA) closed on 10 February 2026, the response of 8000 fellow citizens appeals offer a chance to frame the meta-crisis as an educational transition, rather than viewing it solely as an isolated crisis. We believe the EPA should uphold its fiduciary duty to 'protect the environment'.

We are in a moment in time where the Martuwarra Council must choose between collaborative learning to address human rights and justice issues, or seeking judicial review in court, which could result in costly outcomes (Lilienthal et al. 2024). As water management leaders, it is important for Council to adopt a more thoughtful approach to water stewardship and work with those who share our ethics and values to consider how we shift this colonial perspective (M. Haswell, Poelina, and Shearman 2026).

5.2. Shifting colonial perspectives on water management

As fellow Australians, water leaders we struggle with the transition from capitalist and colonial approaches to sustainable water management. We advocate in our research and practice greater emphasis to be placed on sustainable capital beyond GDP growth. We are shifting our systems thinking around Indigenous science to merge traditional knowledge with modern methods, drawing on centuries of observation and lived experiences. The Martuwarra Council works hard to build our networks to promote a 'Coalition of Hope' to educate communities about sustainable practices

(Poelina 2020). Dialogue is essential to bridge settler-state and Indigenous views on water governance. In 2026, we need this 'Coalition' to be grounded in Kimberley regional voices as a collective and united voice looking to transform both regional governance and new economies (RiverOflife, Carracher, and Poelina 2025). The dialogue must lead to dialogic action; *'cooperation, unity, organisation, and cultural synthesis'*, collective wisdom (Freire 2017).

Our paper highlights the importance of moving beyond anthropocentric views by learning from Martuwarra, People and Country. We argue insights from Martuwarra can help societies address the meta-crisis. I champion the 'West Kimberley Indigenous-Led Climate Adaptation Strategy' can support transition to new, forever wellbeing-focused economies (Poelina in ACF, 2021). Kimberley leaders are developing a biocultural, polycentric governance model as the foundation for a regional framework leading to a Kimberley Climate Authority. This framework also serves as a teaching tool for relationality and belonging (RiverOflife, Carracher, and Poelina 2025).

Education is vital for tackling climate and water justice, combining Indigenous and Western knowledge to change practices. The River teaches reciprocity and responsibility, while elders highlight caring for future generations and the environment. Governance dialogues offer opportunities for Indigenous and settler systems to learn from each other. We believe transformative education can promote environmental justice, equity, and just development on just terms (RiverOflife, Carracher and Poelina 2025; RiverOflife, Poelina, Brueckner & McDuffie 2021).

Martuwarra Council believes the pathway to justice and sustainability must emphasise the importance of Indigenous-led governance for achieving water and climate justice. We need to frame the meta-crisis as an opportunity for collective learning and restoring balance through Indigenous teachings. If this is to be achieved true justice must extend across generations, species, and ecosystems, grounded in Indigenous laws and ethics (RiverOflife, Taylor, and Poelina 2021). Grounded in Free, Prior, and 'continuing' Informed decision-making is essential for ensuring intergenerational equity and sustainable livelihoods. This biocultural and bioregional approach champions the integration of Indigenous knowledge with contemporary science is vital for effective water governance and management (DCCEEW, 2025, RiverOflife, Carracher, and Poelina 2025). Martuwarra Council leaders advocate the need to ensure water and climate justice, are procedural and distributive, importantly we advocate for the need to respond to both water justice and climate justice (RiverOflife, Poelina, and Perdrisat 2024)

Climate change, climate crisis, climate wars whatever frame we want to use, we only need to

watch the news and see fellow Australians across our Country being impacted on by fire, flood, heat, drought and storms. My community and families were heavily impacted we lost everything in our homes and buildings with the 2023 Kimberley floods reported as the largest in Western Australian history. Three years later we are finally returning home. Climate change impacts on the health and wellbeing of Traditional Owners it heightens the health risk of many already suffering with multiple dis-ease (Lansbury and Crosby 2022).

Martuwarra Council and Traditional Owners from the Dampier Peninsular (Saltwater) and through the catchment are partnering with Department of Environment Water Regulations (DEWR), Nulungu Research Institute, and University of Notre Dame (Broome), in leading the West Kimberley Indigenous-Led Climate Adaptation Strategy. This growing body of evidence generated into story maps, has been shared regionally, nationally and globally, see <https://storymaps.arcgis.com/collections/300ad49550ff471a9361b7e7e5962117?item=2>.

West Kimberley regional voices are driving the innovation and imagination to sustain their lifeways and livelihoods, for a climate chance. An evaluation is underway to demonstrate what is required and the cost involved to make the transition to a Kimberley Climate Authority, incorporating biocultural and bioregional governance (Carracher, Martuwarra, and Poelina 2024).

A recent research partnership, *Working with Indigenous Knowledge Holders* strategy highlights collaboration with Indigenous experts to support equitable and inclusive nature-based climate initiatives. The authors stress that engaging Indigenous Knowledge Holders is essential for advancing fairness and inclusion in these efforts (Lo et al. 2026). This publication highlights the urgent need for collaborative action on climate change and biodiversity loss, emphasising their unprecedented global impact. It calls for integrating climate adaptation with biodiversity conservation and stresses the importance of Indigenous Knowledge, grounded in generations of experience, in tackling these issues (Lo et al. 2026).

I emphasised in my presentation, this type of innovation in research underscores the holistic Indigenous worldview, which includes biological, physical, cultural, and spiritual systems. The collaboration recognised and published on the value of Indigenous Knowledge in law and science as essential for informed, ethical decision-making. The Martuwarra Council agrees that climate justice and water justice are interconnected, a crucial consideration when addressing climate change impacts on Indigenous communities. The Council has reached consensus:

- Water is framed as a human right and an Indigenous right, essential for cultural identity and autonomy.
- The paper discusses the need for distributive, procedural, and restorative justice in water governance.
- Climate justice emphasises community voice and the importance of participatory decision-making.
- The ongoing trend of water commercialisation threatens Indigenous access to water resources (RiverOflife et al. 2026).

Our worldviews and ancient wisdom through these types of publications highlight reciprocal relationships with nature and ethical engagement, fosters the integration of land, water and people being intrinsically entwined through a holistic adaptive management approach.

During my presentation I connected the audience to find ways to decolonise our own minds and learn and or unlearn ‘colonial bias’, and value Aboriginal relationships as being deeply embedded in and to the natural world. When we extend colonial ‘protection’ of human rights and the environment to solve complex engineering we can transform our water hydrology and engineering practice. We create a metaphorical space where Indigenous and Western knowledge systems can co-create and integrate for mutual benefit (Watson 2018). By weaving together collective wisdom, we gain enhanced understanding. International agreements like the Kunming-Montreal Global Biodiversity Framework and the Paris Agreement recognise Indigenous Knowledge and the role of Indigenous Peoples in environmental stewardship and policy (Poelina 2026).

6. Law as transtemporal obligation

In 2024, Cristy Clark and I published a book chapter examining how international law’s Western-based concepts of sovereignty, civilisation, nature, and rights have justified colonialism and environmental exploitation, particularly affecting Aboriginal and Torres Strait Islander peoples in Australia (Clark and Poelina 2024).

We argue that international law’s ontological framework often conflicts with Indigenous ontologies, which value relationality and obligations to Country. We examined how such clashes impact Indigenous peoples through the integration of international norms into domestic law. Indigenous groups are actively reshaping these foundations via interventions in both legal arenas. The United Nations Declaration on the Rights of Indigenous Peoples is a vital advocacy tool, as shown by successful climate change communication from Torres Strait Island claimants and

recent Australian case law acknowledging Indigenous perspectives (Clark and Poelina 2024).

Cristy and I challenged core concepts in international law to facilitate Indigenous legal approaches for judicial review and to promote legal pluralism in Australian law reform. Many Indigenous leaders argue that such pluralism is essential for addressing environmental crises and achieving justice. We agree that incorporating Indigenous wisdom into international and domestic law may transform responses to planetary challenges, ensuring public interest and precautionary principles guide equitable development (Poelina, Brueckner, and McDuffie 2021; Turnbull and Poelina 2022). There is consensus that justice and equity must be rooted in precautionary principles; as shown by water issues in the Northern Territory, legal action appears to be needed when government actions threaten public interest or violate these principles (Grafton, Poelina, and Milne 2025).

Working with Professor Gary Lilienthal and his colleagues we analysed how Australian legal systems often neglect the voices of Aboriginal women, focusing on judicial discourse, systemic marginalisation, and the lack of cultural context in legal settings (Lilienthal et al. 2024). A year later these senior women elders highlighted the need for their Indigenous knowledge and values to be considered in the management of the Martuwarra Fitzroy River, advocating alternatives to extractive hydrogeological approaches (RiverOfLife et al. 2026).

The elders' wisdom weaved together stories which emphasise the need for cooperation and unity in governance to ensure justice for Indigenous peoples and the environment, importantly justice for ALL. These stories from senior elders of high degree provide a counterpoint to exploitative development practices:

- A bicultural bioregional governance framework is proposed to include diverse stakeholders in decision-making.
- Trust-building and evidence-based approaches are essential for sustainable water management.
- The integration of Indigenous knowledge is critical for understanding groundwater systems and ensuring ecological sustainability (RiverOfLife et al. 2026).

In our book, we recognise Indigenous Law requires a declaration of peace with Indigenous Australians and with nature as an obligation transcending time. We perceive both National and International law as inherently linear, shaped by Western ideals focused on control rather than care. Yet, as members of society and communities, we have the option to gather knowledgeable individuals to address complexity, fostering solutions that benefit everyone instead of punishing those with differing perspectives. By viewing Law as

a means of sustaining relationships across past, present, and future, we can leverage Law and engineering to connect memory and kinship, thereby encouraging shared responsibility for our universal environment (Poelina et al. 2024).

My take home message to the many hydrologists, engineers and scientists listening to my 2025 Munro Oration was to advance from peace and security frameworks towards justice, dignity, and cultural recognition, water must be valued beyond its commodity status. My Oration emphasised water does shape identity, sovereignty, and memory. I walked from the 2025 Munro Oration, feeling the audience collectively recognised the importance of shifting water governance from top-down benefit-sharing to community-led approaches, emphasising equity and identity. There was a feeling of consensus water is essential for more than use – it embodies deeper meanings – and as water leaders we should champion community-driven management for shared benefits among **All** beings.

7. Conclusion

In closing, we know of stories where dams, diversions, water engineering projects have often displaced Indigenous communities from their land and resources. We know dams and similar infrastructure, sometimes labelled as *green development*, can misrepresent environmental impacts and delay necessary action. Our collective good is to achieve balanced outcomes which require genuine diplomacy, equitable agreements, and Free Prior and continuing Informed consent with Traditional Owners.

I believe the 2025 Crawford Munro Oration I presented highlighted our collective role as Australians in stewarding living waters through stories, art, science, and ancient wisdom. In closing the Oration I advocated support for Martuwarra, the River of Life, and its ecosystem. I felt the audience recognised these universal values in my *Water Story* and connected with the shared challenges across diverse catchments.

Martuwarra Council will continue to investigate how UNESCO who leads the development of Global Geoparks, Biosphere Reserves, and Indigenous Culture/Science Tourism can be championed to show *'The Kimberley'* as an incentive zone for these new economies, and not a sacrifice zone (UNESCO 2021). We believe there is an increasing need for economic investment to protect and promote Australia's cultural and environmental heritage for present and future generations. Rather than continuing extractive industries like oil and gas, we should build sustainable economies that support our communities. This opens new opportunities for Kimberley people, to restore landscapes and heal Country, heal

people and heal Climate. Martuwarra Council will continue to promote the rights of the Martuwarra Fitzroy River to live and flow. We stand with fellow Australians and the global community to advocates for our right to live safely as we have for generations, supporting sustainable lifeways and livelihoods in the Martuwarra Fitzroy River Watershed for present and future generations.

In summary, I trust this story emanating from the 2025 Munro Oration makes the case to Australian water leaders to include Indigenous knowledge systems as essential for comprehensive ecological stewardship. I pose the opportunity for hydrologist and engineers to recognise and adopt ethical aspects of traditional knowledge and to be courageous and build respectful partnerships between Western and Indigenous scientists to enable more effective and inclusive approaches to environmental, water infrastructure, regulation and management. As a Nation, we can celebrate coming from a Country with the oldest scientific and legal wisdom to guide sustaining our lifeways and livelihoods. A Nation where Indigenous cultures highlight the need to rethink sustainability, advocating for stronger commitment to nurturing relationships within our life support ecosystems, to give humanity and Mother Earth a Climate Chance.

Kaliya Maboo

We stop talking now, in a good way.

www.martuwarra.org.

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