

Where waters meet: Re-grounding stream management through epistemic devices and more-than-human collectives

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Key points

- Our Ground Up methodology operates under the explicit authority of Indigenous elders and traditional owners, utilising a "dual authorisation" model that renders differing knowledge traditions mutually visible and independent without forcing conformity.
- The project conceptualises waterways as relational spaces where incommensurable knowledge traditions meet and experiment with generatively going on together.
- Epistemic devices can provide ways of connecting, and keeping separate, incommensurable knowledges.

Abstract

Australia's waterways, featuring increasingly variable flows, need management that moves beyond the "metaphysical flattening" of abstract concepts like "assimilative capacity" (Liboiron, 2021). The Where Waters Meet (WWM) project addresses this need. Approaching water-places as central actors in Australian lives, WWM seeks to enable collectively enacted and institutionally stabilised understandings.

Working with a "Ground Up" approach, we investigate three disparate sites: Gurumbai/Rapid Creek (NT), the Maribyrnong River (VIC), and the Murrumbidgee Ginninderry Conservation Corridor (ACT). At Rapid Creek, we document Larrakia-led "research-caring" practices such as community cleanups, which enact sovereignty by refusing normative knowledges while inviting small, shared alignments. Along the Maribyrnong, we trace how historical ontologies, including the 1880s construction of the Coode Canal, reconstitute themselves within contemporary sensory experiences. On the Murrumbidgee, we consider how an indigenous ranger-led pilot fish trap restoration in the Ginninderry Corridor integrates Ngunnawal knowledge with modern ecology to address biodiversity, sediment flows, river camp life and care of deep river pools.

By documenting "practices-in-practice" and evidencing "problematic testimony", WWM engages current practices of management and stewardship to deliver institutionally stabilised, and dually accountable understandings benefitting policy makers and Traditional Owners. This approach fosters the making-sense-in-common essential for living and evolving with change across Australia's water-places. We particularly focus on the "epistemic devices" by which diverse publics engage with waterways, ranging from hydrological platforms like the SOURCE model, to experiments with signage, or restored First Nations' traditional river infrastructures such as fish traps.

Keywords

Epistemic devices, First Nations, metaphysical flattening, assimilative capacity, Ground Up philosophy, epistemic disconcertment, more-than-human, Australian water-places

Introduction

The Where Waters Meet (WWM) project is concerned with watery-places and their more-than-human collectives. **More-than-human collective** is a name for a tangle of actors that depend on each other. A collective can include water, banks, plants, animals, stones, sediment, infrastructures, things and

people. Working under the guidance of elders and Traditional Owners in three different sites we are continually reminded that Australia's waterways, and their increasingly variable flows, need management that moves beyond the "metaphysical flattening" (Liboiron, 2021) that reduces waters to resources. By speaking of more-than-human collectives, we seek to work in ways that recognise and celebrate the complexity of diverse living relations in place, and to avoid the uncritical use of instrumental management logics, including abstract concepts like 'assimilative capacity' (Liboiron, 2021).

Our Ground Up approach (Christie, 2013; Verran, et al., 2022) is a situated, collaborative qualitative research methodology. In contrast to traditional, top-down academic frameworks, it focuses on developing action-oriented solutions to complex local problems through horizontal collaboration with participants. The methodology operates under the explicit authority of Indigenous elders and traditional owners, utilising a "dual authorisation" model that renders differing knowledge traditions mutually visible and independent without forcing conformity. Ultimately, researchers treat every issue as unique and situated, requiring them to disassemble received assumptions, lean into epistemic friction, and foster organic conditions for local governance and community practices to emerge.



Figure 1 Where Waters Meet places/project sites

In the NT our work involves collaboration between Larrakia elders and Charles Darwin University at Rapid Creek, the only perpetual freshwater source in Darwin. In the ACT our work involves collaborations between Aboriginal rangers, a conservation trust and Australian National University along Goodamon Creek, a tributary of the Murrumbidgee at the Ginninderry Conservation Trust. And in Victoria collaborations are beginning between the Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation (WWWCHAC) and Melbourne University, focusing on places along the Maribyrnong where Wurundjeri continue to navigate their responsibilities to country in relation to other clan nations and water managers.

Our collaborative work is in its very beginning stages. In each of our project sites, we are grappling with legacies of complex colonial histories, while engaging practices of custodianship and management enacted by extant First Nations and settler institutions. This includes confronting the sometimes fraught histories of our own universities and their involvement with these rivers and creeks. This is often through their mobilisation of 'epistemic devices.' An **epistemic device** is an arrangement for knowing something. It could be as simple as a flood water depth sign or as complicated as a catchment model. Many epistemic devices assume waterways to be one thing (ontologically singular) rather than deeply multiple (ontologically multiple), and concomitantly work to stabilise forms of public governance and care operating exclusively in the settler scientific mode. They tend to effect a well-meaning metaphysical flattening, a kind of reduction in the variety of things that make up more-than-human collectives.

Working with First Nations authorities who continue to enact their sovereign custodianship of their lands and waters, we seek to cultivate epistemic devices attuned to 'epistemic disconcertment'

(Verran, 2023) in our collaborative work, and an appreciation for ‘metaphysical bumpiness’ as an ongoing condition of stewardship of and in watery places. In these settings, **epistemic disconcertment** refers to some unsettling awareness of different ways of knowing. **Metaphysical bumpiness** comes from the underlying diversity of things that make up more-than-human collectives. We’ve experienced many stops and starts as we begin to feel our way, inquiring into the kinds of practices and procedures we might cultivate in embedding epistemically ‘just’ (or less epistemically ‘unjust’) institutional relations in the lives of these Australian watery places.

In being at the beginning stages of our work, this paper represents a reflection on our emerging involvements as non-Indigenous Researchers in the collectives of these three watery places. We take care to speak only of our own experience, and in agreement with our collaborators, will not present any Indigenous intellectual property not already publicly shared.

Ancestral connections and colonial histories

For the Gulumoerrgin Larrakia elders working with Rapid Creek, there is important work to be done allowing this place to ‘voice’ itself again. Rising in Marrara swamp, the freshwater flows of this creek were constituted in The Dreaming. These creation stories remain mostly undisclosed to settler collaborators, recognising that the many different mainstream institutions establishing themselves along Rapid Creek have left a continuing residue. The Christian mission that established itself here in the late 1800s failed to maintain a foothold, but Larrakia elders continually point to Christian institutions as central in land alienation and dispossession. When the settler Defence Forces fenced the lands around Marrara swamp, Larrakia access was curtailed the same time as bushland was protected from further development. Similarly, past collaborations with the university have been primarily involved working through ecological frames and relations with Traditional owners, and today as new flow monitors are installed along the creek they are recognised as producing important data, as well as generating new ontological incursions in place.

For Indigenous rangers working along the Murrumbidgee in the ACT, the work to be done on the river is connected to the problem of getting people on the river. The Gininderry Conservation Trust manages the last section of the Murrumbidgee Corridor before the river leaves the ACT. The river and its banks here are important zones of contestation between suburban expansion and potential for traditional owners to own and manage water and land in the ACT. The current Western Edge campaign and controversy in the ACT hinges on the significance of the Murra-Bidgee (‘pathway-boss’, Bradley Bell) for traditional owners and other people. Traditional owners and custodians, federal politicians, and ANU scientists voice the problem as (i) nowhere to camp and practice people/country along the river; (ii) wide community concern (strong Yes-vote in the 2023 referendum) but little practical and meaningful action on traditional owners belonging; (iii) national woodland and freshwater ecological significance of this stretch of river. Indigenous researchers have some scope with university and community support. Other recent developments, such as the Ngunnawal Watermarks project in the centre of Canberra have created dry creek beds and re-surfaced concrete stormwater infrastructures with Dreaming stories. Such projects enact connection to waterways in song, stories, and painting in place.

The Wurundjeri Traditional Owners of places where the Maribyrnong flows through Melbourne/Naarm, have taken pause to consider what a project like this might offer. The University of Melbourne, a colonial institution formed in 1853 on Wurundjeri Woi Wurrung country, has a less than exemplary record in terms of its engagement with the Traditional Owners, evidenced at length in the first volume of *Dhoombak Goobgoowana* (the University’s truth telling book, (Hatendi, 2024)). The land on which the university sits (through which a creek once ran) was appropriated without concern or recompense for those who called it home, understanding it only as a resource which was the Crown’s to survey and allocate. However, changing times (as evidenced by Victoria’s new Treaty) has the University explicitly seeking to atone for its past record, and relations with the Wurundjeri are at the forefront of this work (Jones, Waghore and Langton 2024). Recognising this history is critical to understanding the caution with which the WWWCHAC approach this project. The university’s history is embedded in place, land

from which its esteem has been established. Yet this esteem, enjoyed locally, nationally and internationally, does not confer it with authority in the eyes of the WWWCHAC. Rather the university has to work to do; it is not a given that that this (or any) project will recognise Wurundjeri sovereignty over the country, or work to realise Wurundjeri aspirations in practice, proof of our bona fides is required before we can move on to what this project will actually do.

Gradual emerging collaborations where waters meet as collective practice on the ground

Working on the ground across three watery places, the project title 'where waters meet' draws attention to radically different waters and knowledge practices which are of concern in our collaborations (Verran, 2013). This does not refer to the meeting of two tributaries that run together easily, but to ontologically disparate waterways that can nonetheless be worked together judiciously in-practice. Initiatives proposed by traditional owners ground our work and open up processes for gradually becoming familiar with these places and with the realities of negotiating such work amid the crowded collectives of these waterways. As experimental relational inquiry practised on the ground, we are involved in, rather than working separately from the social, material, legal, institutional practices which shape, and are shaped by, these waterways. Becoming sensitised to relevant points of contention within these tense fields of action is formative within our Ground Up inquiry.

The Larrakia elders proposal is to begin with a number of small initiatives, working slowly around 'voicing' Rapid Creek. This includes carefully approved and curated audio-visual work, involving the bringing back of certain elders and young people to ceremonial sites, re-working public signage and quite particular 'creek clean-ups'. The passage of the creek has been changed over time as there has been dredging to make swimming holes, and the construction of a new hotel precinct and water park on airport lands. Remembering how the creek used to flow, and the places for collection of clays and dyes, means walking along tracks cleared for tourist access, as well as the other side of the creek which is more overgrown, and managed in patchy ways by different public and private land owners. Trying to gain access to gather drone footage means hitting up against airport and civil aviation authority regulations for remotely piloted aircraft. Looking for historical images of creek flows have seen us trying to access archives of the Christian mission, and old airforce images.

The Indigenous ranger T.'s proposal is to put a fish trap on a creek, Goodaman's Creek, which runs down from the new estate through the conservation trust area and into the Murrumbidgee. The creek has water almost all the time now because the land developers have built a series of holding ponds and other drainage works to manage the runoff from the new streets, houses and public areas. These feed the creek. On the trust land, where the small indigenous ranger team works alongside a larger group of rangers managing the land, the previous landholders built dams for stock. The creek runs through these and down the mostly completely cleared slopes to the edge of the Murrumbidgee. Halfway up the hill, the trust has built an impressive suspension bridge that spans the creek as part of their project to bring this place back from sheep pasture to a grassy woodland river corridor that local residents will value and other people will want to visit.

Guided by the WWWCHAC, there are already a number of connections that this group holds with the University of Melbourne. This might seem to indicate that the two organisations are already systematically linked, and thus new projects like this one can be understood as extensions of existing relationships and agreements. But such a view assumes that the Corporation as an entity is the pre-eminent actor, authorising the activities and those who undertake them under its auspices. The reality is more complex. While the organisation is an important actor, and those employed by it depend on it for their capacity to work safely and accountably, Wurundjeri people encounter each project and what it may entail as potential 'events in place'. Thus, their passage from idea to reality must proceed through a grounded, negotiated process within which the right people are empowered to make decisions as to a project's worth and value. Who these people are, and how they are identified and involved, emerges within the negotiation process itself. This in turn means that the work involved in

bringing a project into being is a critical factor of the project itself, understood not just as procedural but something that frames, grounds and authorises it.

Three stories: Tentative identification of emergent epistemic devices, practices and procedures

Accounting for our involvement in these collaborations as scholarly work, we generate ethnographic accounts as 'stories of disconcertment' (Verran and Christie, 2013). These are episodes of collaborative practice in which, by being accountable to First Nations knowledge authorities enacting their epistemic commitments in good faith, we work to make our own assumptions visible within the context of emerging Ground Up work. We see this as a significant first step and important precursor to then negotiating ways forward that maintain disparate commitments in epistemic work.

Story 1: Video work 'voicing' Rapid Creek



Figure 2 Under the surface of Rapid Creek, still from video footage

There has been long term collaboration between the Larrakia elders and Traditional Owners of Rapid Creek and various parts of CDU, including our Group. In beginning to work on this project, there was governance work around the proper knowledge of the creek which needed to be established through conversations with family groups, but before that we needed to be with the creek together.

It was important we walk from the creek from where the water is fresh near the Darwin airport down to the estuary at Casuarina beach where the water becomes brackish and enters the sea. This took in the area recently excavated for an RV park, bush foods and sites for collecting pandanus fibres for weaving. As we went, I was to be recording small video dialogues, shared between the two elders, telling and mixing stories of childhood, ancestral times, and concerns of current management. As an archive compendium these could be cross-referenced, mixed and also replayed in place - by young Larrakia and also others.

At the end of what ended up being a long, slow walk involving many stops and starts we began to wrap up. It was at this point that one of the elders turned to me and said 'just go and do the underwater shots now'. I had a GoPro and I knew it was possible. But what was I supposed to see? What was I supposed to film? There wasn't any ready explanation forthcoming. 'Just go and put the camera under the water!' Whatever the imperative was, it was important. So, with some hesitation I did exactly as asked.

In using devices like the camera and GoPro, also camera traps and drones, we're slowly becoming more proficient as a team, in working out what these technologies are likely to see. It's important that the camera traps do not detect spirits, or pose a threat to those sleeping rough along the creek. There is an assemblage of people-place-technologies coming to the fore that remains almost entirely opaque, while the effective agency of this work seems completely clear to all others involved.

Story 2: A pilot fishtrap restoration for the Murrumbidgee River



Figure 3 Goodman Creek, near Murrumbidgee confluence

We are meeting in the Trust's office to talk about the fish trap, and two things are under discussion for T., the indigenous ranger, the Trust managers A. and J.: how will traditional owners be involved? And, what will the fish trap do? The talk that follows covers:

1. Where will it be? This is entirely clear to T. T explains where it will fit on Goodaman Creek, and how big it will be. It will be a nursery for *galaxias* too small to escape the carp in the deep pool nearby in the Murrumbidgee.
2. What kind of trap will it be? T. describes a couple of different kinds of traps - sluices, labyrinths, dams. A. suggests getting the weaving people involved too. I offer to help build it and T. quickly responds: 'we will do that.'
3. What will it do? The fish trap should make a deep pool. This goes back to the question of how sediment moves down the hill into the river. It refers to the effect of water rolling behind the fish trap wall, scouring out sediment, and thereby creating a deeper pool that is better for fish, and better for the water. But it also concerns the river camp, the place beside the fish trap where Ngunnawal collected and camped in great numbers. The depth of the pool and its fish have something to do with collecting and connecting people again. So, the three questions about where, what and who are maybe the same question, albeit a question with multiple connected answers.

Story 3: Slow, careful negotiations...



Figure 4 Maribyrnong River

This seed for this project in Melbourne/Naarm was planted when the author attended a Welcome to Country offered by Wurundjeri elder Uncle Bill Nicholson. Uncle Bill is the leader of Wurundjeri's Education program, and mentioned in the welcome the challenges that Wurundjeri have as the last clan of the Woi Wurrung in appropriately taking responsibility for the clan lands of those clans who did not survive as distinct communities from the devastation of colonisation. Living, as I do, near the Maribyrnong River in Melbourne/Naarm's west, I recognised I live on-country to which he was referring. I followed up with Uncle Bill, who told me of the work senior Wurundjeri are doing to understand their role in looking after the places that were formerly cared for by other clans. He mentioned that such work was necessarily exploratory, needing to be done with care and could not be rushed, but also urgent, in that WWWCHAC were constantly being asked to provide input on a diverse range of matters relating to the land for which they are the Traditional Owners.

I talked with further senior Wurundjeri people, who indicated that a project like 'Where Waters Meet' would be a great opportunity for the WWWCHAC. It would support the exploratory work of the elders, create further employment opportunities for young people, and enable the corporation to further develop itself as an organisation that can appropriately manage Wurundjeri rights and obligations in contemporary times. They were clear that while they supported the project, the negotiation of how it would manifest itself would depend on what was going on at the time, and who was available and interested in the work it would support.

A number of fruitful discussions have been held with a range of Wurundjeri people and WWWCHAC staff (which includes a lot of Wurundjeri people) around how the 'Where Waters Meet' project might usefully assist WWWCHAC. These discussions have focused on a small range of projects and issues relating to the waterways of Melbourne/Naarm's west where the Wurundjeri are being asked to participate as Traditional Owners in sanctioning or providing input into management decisions initiated by others, or to participate in projects in which their cooperation is sought. Yet questions remain, is this project really going to be different from others? If so, how? Is the promise of taking Wurundjeri sovereignty seriously one that can be made in good faith? The challenges of working between institutions and between ways of being in the world when those worlds and institutions are being remade in the present looms large in this project. Keeping this in mind, as we attend carefully to the forging of ongoing accountable relations in place, requires recognising the long history of harm but not being contained by it.

Conclusions

The WWM project has its source in the notion that something significant meets in watery-places. As more-than-human collectives, waters are zones of mixing and bumpiness. We focus on the epistemic disconcertments associated with this mixing, and aim to invert some of the top layers of water management through models, catchments, sediment and flood control with pools of traditional owners' knowledge. In each watery-place, we are working to locate, talk about, observe and support epistemic devices that join different knowledges.

Epistemic devices and their associated practices-in-practice may differently testify, or 'make public' the ontological multiplicity of Australian watery places. Crafting these devices involves embodied experimentation. The experiments take place in the presence of the various collectives they concern, and the accountabilities of the First Nation peoples involved. As such, governance with and in watery-places also becomes particular, and locally negotiated.

Knowledges have to remain incommensurable and in important ways unshareable in a Ground Up approach. Not all participants are in the same place (historically, relationally, bodily). The epistemic devices we support do not create easily transportable knowledge but sense incommensurability, and uphold, (un)like a stream gauge, multiple ontologies.

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