

Submission to the Dept of Water and Environmental Regulation

Consultation Draft: Fitzroy-Derby Water Resources Management Plan: Policy and Guidance

Submitted by: Michael Pemberton, [REDACTED]

Date: 13 May 2026

Opening statement

I am making this submission as someone who has lived in the Kimberley where I was employed as a geologist, initially on the Fitzroy River. I moved out of that extractive line of work into a career in geoheritage and conservation, as I grew to understand the impact of this work on the environment and on Indigenous Australians. I am now engaged in river protection on the NSW Mid North Coast, where rivers carry their own long legacies of upstream contamination, downstream community exclusion and regulatory fragmentation.

This submission focuses on the limitations of the plan's technical architecture and identifies three compounding vulnerabilities that constitute a structural failure of the plan's protective intent, in that it assumes a stable world.

There is general scientific consensus that we no longer inhabit such a world.

The plan's groundwater allocation framework sets limits designed to protect the saltwater interface. The monitoring system is designed to detect when those limits are under pressure. But both instruments operate within the plan's regulatory boundary - and Project Valhalla does not.

Valhalla is an active fracking proposal for the catchment, proceeding through a separate environmental assessment process. This plan does not address it. If Valhalla proceeds, it could render this entire protective architecture meaningless - devastating for the river and its dependents, human and non-human alike, and a waste of the public investment this plan represents.

Understanding why requires holding three things together at once.

First, this plan is designed to manage water in a living system, one with its own dynamics, interdependencies and thresholds that do not respect regulatory categories.

Second, that system is changing more rapidly than the science can capture. Climate-driven shifts in rainfall, evaporation, and flood frequency are outpacing the baseline assumptions on which current monitoring and allocation frameworks rest.

Third, an industrial threat is bearing down from outside the plan's regulatory boundary. Project Valhalla is being assessed under the Environmental Protection Act, a separate legislative regime with no formal obligation to conform to this plan's allocation limits, water management zones, or saltwater interface policies. This does not appear to be an oversight. It

appears to be a structural feature of how WA's regulatory architecture is designed. The EPA's own assessment acknowledges that the Liveringa Aquifer discharges into the Martuwarra approximately 20km down-hydraulic gradient from the development envelope - the hydrological connection to the river is not in dispute. What is absent is any mechanism requiring that connection to be assessed against the protective framework this plan establishes.

1. The structure of the allocation framework, a shrinking resource and the climate's shifting baseline

In 2021, the Martuwarra Fitzroy River Council, the Water Justice Hub and the Environmental Defenders Office jointly submitted on the Derby Groundwater Allocation Plan (the predecessor process covering the same groundwater systems this plan now incorporates). They identified inadequate recharge rate calculations, failure to assess climate change impacts on groundwater recharge and insufficient assessment of saltwater intrusion risks from increased extraction.

They recommended that water licences be expressed in nominal volumes with permitted annual extractions varying between 0 and 100% depending on actual water availability, tying extraction to *real recharge conditions* rather than historical estimates.

It is now 2026. This draft plan does not indicate that those concerns have been addressed. I ask DWER to publicly confirm how each concern raised in the 2021 submission has been incorporated, and if it hasn't, to explain why not.

The plan sets groundwater allocation limits at 40% of estimated annual rainfall recharge - described as a precautionary approach. Total allocation across all groundwater resources is 75.7 gigalitres per year, with approximately 50 gigalitres currently available for licensing. This rests on one foundational assumption: that historical rainfall recharge estimates are a reliable basis for setting extraction limits. They are not.

The monsoon system, once a given, is no longer certain. In a period of accelerating climate change, 40% of a shrinking recharge figure is not the same as 40% of a stable baseline. The precautionary principle, as applied here, is only as sound as the number it is applied to. It should be named for what it is in this context – a permissive principle, or a burden-shifting fallacy.

Aboriginal cultures operate on a principle of not taking more than 10% of any resource. Having observed what irrigation has done to the Ord, there is both wisdom and hard-won ecological literacy in that position. It is difficult to argue with thousands of years of finely calibrated observation. The contrast with 40% of an already uncertain estimate is not comfortable.

1.2 The evidence that the baseline is already moving

The plan acknowledges climate variability as an external factor that may affect implementation. This framing - climate change as something that happens to the plan rather than something the plan must be built to withstand - understates what is already observable in the catchment.

Traditional Owners whose families have lived with, read, and cared for this country across generations are observing changes that no monitoring bore records. Observations shared by Traditional Owner representatives in the Fitzroy catchment in May 2026 describe the disappearance of food and medicine plants from locations where they have grown for as long as memory reaches, the loss of species whose presence once marked the reliability of seasonal patterns and the encroachment of salinity into coastal and estuarine areas in ways consistent with tidal hydraulics already responding to sea level change. These observations are not anecdote. They are longitudinal ecological monitoring of extraordinary resolution, conducted by people whose survival has depended on its accuracy - and they describe changes that are occurring now, before any monitoring bore has registered them.

Northern Australian monsoon behaviour is documented to be shifting. CSIRO and Bureau of Meteorology climate projections for northern Australia consistently indicate increased rainfall variability, greater intensity in wet season events and reduced dry season rainfall - trends already measurable in Kimberley rainfall records. Recharge to alluvial and sandstone aquifers in monsoonal systems is acutely sensitive to the timing and distribution of rainfall events, not just total annual volume. A shift toward fewer, more intense events with longer dry intervals reduces effective recharge even where total rainfall remains nominally stable. The recharge estimates on which this plan's allocation limits rest were derived from historical data that may no longer represent the system's future behaviour.

1.3 What the plan must do

The submission respectfully requests that DWER:

First, commission climate scenario stress-testing of all groundwater allocation limits before the plan is finalised - specifically modelling allocation sustainability under projected rainfall trajectory ranges for the Kimberley region across 20, 50 and 100-year horizons. Limits set without this analysis are historically calibrated and not genuinely precautionary. Precaution requires knowing what you are taking 40% of and allocating fairly for future generations.

Second, establish a formal mechanism - not merely an aspiration - for revising allocation limits in response to observed recharge decline, without requiring a full plan amendment. The current adaptive management framework applies to licence conditions and operating strategies. It does not reach allocation limits themselves. A declining recharge trend detected in monitoring data should trigger a formal allocation review process. This mechanism should be specified in the final plan.

Third, formally incorporate, and honour, Traditional Owner ecological observation as a climate indicator feeding into both the monitoring framework and the allocation review trigger. The plan's vision states that Traditional Owners are the first scientists and water managers of this country. They were, primarily, *carers* of Country. The operative framework must reflect that statement and build caring into this plan too.

Traditional Owner observation of plant community change, species presence and absence, and seasonal pattern shift should carry formal weight in adaptive management - not as supplementary colour but as a trigger for investigation. When such observation identifies change that monitoring data has not yet recorded, it should formally initiate hydrological assessment.

This is how leading indicators function in any well-designed monitoring system. The people best positioned to detect early-stage systemic change in this catchment are those who have watched and cared for it longest. *Their observations should open doors in the regulatory process, not wait outside them.*

Fourth, consistent with the recommendation of the Martuwarra Fitzroy River Council, Water Justice Hub and Environmental Defenders Office in their 2021 submission, water licences in the Fitzroy-Derby plan area should be expressed in nominal volumes with permitted annual extractions varying between zero and 100% of that nominal volume depending on actual recharge conditions, surface flows and water availability in any given year. This is the only licensing mechanism that genuinely ties extraction to the reality of the resource rather than to a historical estimate of it. It should be a standard condition of all new groundwater licences granted under this plan.

2. The saltwater interface: a reactive framework for an anticipatory threat

2.1 The tidal context

King Sound experiences tidal ranges among the largest on Earth. They regularly exceed 10 metres, with recorded maximums approaching 12 metres. This is the defining hydrological reality of the lower catchment and Derby Peninsula and it fundamentally changes the nature of the saltwater interface management problem.

In most coastal aquifer systems, saltwater intrusion is a relatively slow diffusive process - a gradient that monitoring can track and management can respond to. In King Sound, saltwater is a tidal hydraulic force operating twice daily at extreme amplitude. The freshwater-saltwater interface in the Wallal and Erskine aquifers of the Derby Peninsula is not a stable boundary slowly migrating under abstraction pressure. It's a *dynamic* boundary being pushed and pulled by tidal forces of extraordinary magnitude, against which groundwater pressure must be maintained to prevent inland intrusion.

Sea level rise in this context is not an incremental addition to a stable baseline. It is an amplification of a tidal force already operating at the extreme end of the global range. A rise of even 20-30 centimetres in mean sea level materially changes the hydraulic balance in aquifer systems where tidal excursion already reaches kilometres inland through creek and estuary systems.

2.2 What the monitoring framework can and cannot see

The plan establishes the King Sound Coastal Management Zone with licence conditions requiring regular salinity sampling from production bores and baseline monitoring before licences are granted. This at first appears to be a reasonable framework for detecting intrusion after it has begun to occur in licensed abstraction areas.

However, it can't detect the early-stage ecological signatures of saltwater stress that Traditional Owner observation is already recording - changes in the composition and health of coastal and estuarine vegetation communities, the retreat of freshwater-dependent plant species from locations where they have historically persisted, the altered behaviour of species that use tidal and freshwater transition zones as critical habitat.

By the time salinity registers in a production bore monitoring sample, the ecological damage in the surrounding landscape has already occurred. The monitoring framework is, by design, a lagging indicator.

In a system under active tidal hydraulic pressure and sea level rise, lagging indicators are insufficient protection.

2.3 What the plan needs to do

The submission respectfully requests that DWER:

Firstly, commission specific hydrological modelling of saltwater interface dynamics in the Derby Peninsula and lower catchment aquifers under sea level rise scenarios consistent with current IPCC projections *before* any new groundwater licences are granted in the Derby Peninsula subarea. The plan classifies the Derby Peninsula Wallal aquifer as restricted for further general licensing. That restriction should be maintained until this modelling is complete, and the modelling should be incorporated into the final plan. Aboriginal community water supply is already protected as an exempt purpose. The Aboriginal Water Holding sits in the Greater Derby and Fitzroy subareas, not the Derby Peninsula - it is not affected by this request. The submission asks only that the existing restriction on general licensing remain in place until the modelling is done. That is entirely consistent with the plan's own precautionary logic.

The inadequate assessment of saltwater intrusion impacts from increased extraction in the Greater Derby subarea was specifically identified in the 2021 MFRC submission. The current plan's coastal management zone represents an improvement but does not constitute the comprehensive assessment that was then requested and remains outstanding.

Secondly, establish ecological monitoring of saltwater stress indicators in coastal and estuarine vegetation communities as a formal performance indicator - *not* an optional addition to operating strategies. The retreat of freshwater-dependent vegetation is a leading indicator of aquifer stress that bore monitoring cannot provide. It should be resourced and required.

Thirdly, recognise Traditional Owner observation of coastal and estuarine ecological change as a formal input to saltwater interface assessments. The people who have watched this coastline across generations know its vegetation communities and their responses to change with a precision that no monitoring program installed in 2026 can replicate.

In a century defined by cascading environmental risk, the management of this river requires a fundamental inversion of the default regulatory burden. The question should not be: has harm been proven? It should be: has safety been demonstrated to the satisfaction of those who know this country best and have most to lose? That is not sentiment. It's the only form of precaution adequate to the scale of what is at stake.

3. Project Valhalla: The threat this plan does not see

3.1 What is happening simultaneously

In January 2026, while this water plan was being finalised, the WA Environmental Protection Authority recommended that Bennett Resources, a subsidiary of US-based Black Mountain Energy, be permitted to frack up to 20 wells in the West Kimberley under Project Valhalla. The project is located within the Martuwarra Fitzroy River catchment, 18 kilometres from the Yungngora/Noonkanbah community and 123 kilometres from Derby. Each well now proposes to use up to 100 megalitres of water - *more than double the original estimate*. Black Mountain's long-term vision, if the initial project proceeds, is an estimated 2,000 wells across the Kimberley.

This plan does not mention Project Valhalla. It does not mention hydraulic fracturing. It does not address the possibility that the aquifer systems it is simultaneously allocating and promising to protect could be contaminated by industrial fracking operations proceeding through an entirely separate regulatory process.

This is not a minor omission. It is a structural incoherence at the heart of the plan's protective intent.

3.2 The specific technical risks

Hydraulic fracturing in the Canning Basin's fractured rock and alluvial systems creates pathways for contamination between aquifer systems that are otherwise separated by confining layers. The plan itself acknowledges that aquifer-to-aquifer connectivity is a key management concern - it establishes the Alluvial Connectivity Management Zone precisely because the relationship between shallow alluvial aquifers and deeper systems requires careful management. Fracking compromises exactly this connectivity through induced fracturing of confining layers.

The plan allocates groundwater from the Grant Poole, Wallal and Erskine aquifers for general licensing and the Aboriginal Water Holding. These are the same aquifer systems within whose catchment Project Valhalla proposes to operate. An independent expert scientific committee report commissioned by the federal government found uncertainty over whether groundwater could be protected from hazardous chemicals under the Valhalla proposal.

The wet season risk is additionally acute. Fracking operations produce contaminated wastewater that must be stored in surface ponds. In the Kimberley's monsoonal wet season, with rainfall events capable of generating rapid and extreme flooding, the risk of chemical pond overflow into watercourses and connected groundwater is not theoretical but a reasonably foreseeable consequence of operating industrial wastewater infrastructure in a monsoonal landscape.

The Martuwarra's persistent pools - its ecological and cultural heart, the places that sustain life through the dry season, the places around which Traditional Owner knowledge systems are organised - are directly connected to the alluvial aquifers whose protection is this plan's central ecological commitment. Contamination pathways from fracking operations into those aquifers represent an existential threat to the values this plan exists to protect.

3.3 The governance incoherence

The WA Government has committed, in this plan, to protecting the Martuwarra as a free-flowing system, maintaining water regimes within their natural range, protecting water-dependent ecosystems and sites of cultural significance and enabling Aboriginal Water Holding economic development. It has simultaneously, through the EPA, recommended approval of a fracking project within the catchment, while acknowledging that eight of the twenty promised fracking safeguards remain incomplete, five years after the deadline by which they were committed to be in place.

The Code of Practice setting minimum standards for fracking does not exist. Legislation granting Traditional Owners a veto over fracking on their Country does not exist.

A water management plan and a fracking approval proceeding simultaneously through separate regulatory processes, with no formal connection between them, is not a coherent approach to managing a living river system. It is the same regulatory fragmentation that has destroyed rivers elsewhere in Australia - where the agency that allocates water does not speak to the agency that permits the activity that contaminates it. It is a structural failure, not a reflection on the genuine care evident elsewhere in this plan. But good intent cannot survive incoherent architecture. The Martuwarra deserves both.

3.4 What the plan must do

This submission recognises that DWER does not regulate hydraulic fracturing. That is the domain of the EPA under the Environmental Protection Act 1986 and the Department of Mines, Petroleum and Exploration under the Petroleum and Geothermal Energy Resources Act 1967. DWER cannot refuse or condition a fracking approval and this submission does not ask it to.

What DWER can do - and what this submission definitely does ask - falls into two distinct categories: actions within DWER's existing mandate, and recommendations to the WA Government that go beyond it. Both are appropriate and necessary.

Within mandate: any application to extract water for fracking operations within the Fitzroy-Derby plan area requires a water licence assessed against this plan's allocation limits and protective policies.

DWER should confirm explicitly that this requirement applies to Project Valhalla and any future hydraulic fracturing proposals - that fracking water use is not exempt from water licensing, and that the plan's protective architecture applies to it fully.

There is an ethical dimension this plan does not name but cannot avoid. Hydraulic fracturing is not merely a local water management risk. It's a fossil fuel extraction technology whose proliferation the international scientific community has identified as incompatible with limiting planetary warming to survivable levels.

Approving fracking within the catchment of one of Australia's last free-flowing rivers, while simultaneously publishing a plan committed to that river's protection, is not a regulatory tension to be managed. It is a contradiction that future generations will find either incomprehensible or unforgivable.

By recommendation, the submission respectfully requests that DWER:

Firstly, formally acknowledge within the final plan that Project Valhalla and any future hydraulic fracturing proposals within the Fitzroy River catchment represent a material threat to the groundwater systems this plan allocates and protects - and that the plan's protective architecture cannot be considered adequate while fracking approvals proceed through a separate process with no formal connection to water plan objectives.

Secondly, recommend to the WA Government that no fracking production approvals be granted within the Fitzroy-Derby plan area until: this plan is finalised, the Aboriginal Water Holding governance framework is established, all twenty safeguards committed to following the Hatton inquiry are fully implemented and Traditional Owner veto rights over fracking on their country are legislated.

Thirdly, establish a formal referral mechanism requiring any EPA environmental impact assessment for projects within the Fitzroy-Derby plan area that propose to use or potentially contaminate groundwater be assessed against this plan's allocation limits, protective policies and water management zone requirements - not as a separate process but as an integrated one.

4. The missing architecture: river rights and the governance gap

These three vulnerabilities - shifting climate baseline, inadequate saltwater interface protection and fracking proceeding outside the plan's regulatory boundary - share a common root. The plan manages water. No authority is accountable for the Martuwarra as an integrated living system.

The EPA assesses fracking. DWER allocates groundwater. DBCA manages conservation estates. DPLH administers heritage. The Australian Government holds EPBC powers over matters of national environmental significance. Each agency manages its designated domain. None is the river's custodian. When the fracking assessment and the water plan proceed simultaneously through separate processes, no authority has either the mandate or the obligation to ask: what does this mean for the Martuwarra as a whole?

The Traditional Owners of this catchment have already answered that question through the Fitzroy River Declaration and the establishment of the Martuwarra Fitzroy River Council. They have asserted, in terms grounded in tens of thousands of years of custodial relationship, that the Martuwarra is a living entity with rights - rights to flow, to nourish, to be known, to persist.

To give life.

That assertion is not reflected anywhere in this plan's operative framework.

This plan cannot legislate river rights. But it can and should explicitly recommend to the WA Government that legal personhood for the Martuwarra is the governance architecture that would resolve the fragmentation this plan cannot, within its current mandate, address.

The Whanganui River in Aotearoa New Zealand is cited not as a directly transferable model - its legal personhood emerged from a specific Treaty settlement context without precise Australian equivalent - but as proof of concept: that a river can be recognised as a legal entity with guardians empowered to speak for it across regulatory boundaries. The constitutional and legal mechanism for the Martuwarra would need to be developed in the Australian context, in genuine partnership with the Traditional Owners who have already asserted this river's rights through the Fitzroy River Declaration and the Martuwarra Fitzroy River Council.

This recommendation is made more urgent, not less, by the plan's own innovation. Traditional Owners in this catchment will hold economic rights over approximately 25 giganlitres of groundwater annually through the Aboriginal Water Holding. Legal personhood would give those same Traditional Owners standing to speak for the river as its guardians across the regulatory processes - including fracking assessments - where they currently have no formal standing. The Aboriginal Water Holding and river legal personhood are not alternatives. They are complementary instruments: one gives Traditional Owners economic power over water, the other gives them the standing to protect the living system that makes that water meaningful.

A river that can be represented in law is a river that then can't be managed to death through regulatory fragmentation. That's what the Martuwarra needs, and what this plan should have the courage to recommend.

We stand at a threshold moment. The Martuwarra is one of the last large free-flowing rivers on this continent. The decisions made in the next months - on this plan, on Project Valhalla, on whether fracking safeguards are completed before approvals proceed - will determine whether future generations inherit a living river and country or a managed remnant. The Aboriginal Water Holding offers an extraordinary economic future for Traditional Owners, but only if the river that makes it meaningful remains intact. The bushwalking trail that Traditional Owners envision - Country as classroom, river as teacher - can only exist if the country through which it passes remains alive enough to teach.

This is not a moment for incremental precaution. It is a moment for the kind of decision that future generations will either thank us for or be unable to comprehend that we failed to make it. The loss of a living river and country is not merely an ecological event. It produces what climate psychologists now term existential grief - a harm that is real, measurable, and falls disproportionately on those whose identity, culture and law are inseparable from the country being lost. This is a harm that ethical governance has a responsibility to prevent, not simply to note.

Summary of requests

On climate baseline vulnerability:

- Commission climate scenario stress-testing of all groundwater allocation limits before finalisation, modelling sustainability across 20, 50 and 100-year rainfall trajectory ranges
- Establish a formal allocation review trigger mechanism in response to observed recharge decline, operable without requiring full plan amendment

- Formally incorporate Traditional Owner ecological observation as a leading indicator and investigation trigger within the adaptive management framework

On saltwater interface protection:

- Commission hydrological modelling of saltwater interface dynamics under current IPCC sea level rise scenarios before new Derby Peninsula general licences are granted
- Establish ecological monitoring of saltwater stress indicators in coastal and estuarine vegetation communities as a formal performance indicator
- Recognise Traditional Owner coastal ecological observation as a formal input to interface assessments

On Project Valhalla and fracking:

- Confirm explicitly that water licence requirements under this plan apply to hydraulic fracturing operations within the plan area, including Project Valhalla, without exemption
- Formally acknowledge hydraulic fracturing as a material threat to the plan area's groundwater systems within the final plan
- Recommend to the WA Government that no fracking production approvals be granted within the plan area until this plan is finalised, the Aboriginal Water Holding governance framework is established, all Hatton inquiry safeguards are implemented, and Traditional Owner veto rights are legislated
- Establish a formal referral mechanism connecting EPA fracking assessments to this plan's protective policies and allocation limits

On river rights:

- Explicitly recommend to the WA Government that legal personhood for the Martuwarra, developed in genuine partnership with Traditional Owners and building on the Fitzroy River Declaration and Martuwarra Fitzroy River Council, is the governance architecture necessary to resolve the regulatory fragmentation this plan cannot address within its current mandate
- Recognise that the Aboriginal Water Holding and river legal personhood are complementary instruments, not alternatives - and that Traditional Owners holding economic rights over water in the catchment should also hold standing to speak for the river as its guardians across all regulatory processes affecting it

Conclusion

I object to this plan as it stands. The evidence presented above demonstrates three compounding vulnerabilities that, taken together, require material changes to the final plan before it is determined: a groundwater allocation framework calibrated against a climate baseline that is already shifting; a saltwater interface monitoring system that cannot anticipate the threat it is designed to detect; and an active fracking proposal proceeding simultaneously within the catchment through a separate regulatory process that this plan does not address. I request that the changes outlined above be incorporated into the final plan before determination. The Martuwarra cannot wait for the next review cycle. Nor can the communities - human and non-human - whose lives it sustains.

The concerns this submission raises are not new to DWER. As mentioned above, in 2021 the Martuwarra Fitzroy River Council, the Water Justice Hub and the Environmental Defenders Office formally identified inadequate recharge rate calculations, unassessed climate change impacts on groundwater, and insufficient saltwater intrusion analysis as material deficiencies in the Derby Groundwater Allocation Plan, the predecessor process covering these same aquifer systems. They recommended seasonal management of extraction volumes tied to actual recharge conditions. This draft plan, published four years later, does not demonstrate that those concerns have been resolved. The Martuwarra cannot continue to absorb the cost of unresolved questions about the systems that sustain it. DWER is respectfully asked to account for what has changed since 2021 as well as what has not.