National Water Reform

Arid Lands Environment Centre

Acknowledgement of Country

ALEC acknowledges the Traditional Owners, the Arrernte people, on whose land this submission was written.

We also pay respect to the four Kaytetye speaking land-holding groups, Akwerlpe-Waake, Iliyarne, Anerre and Arlpwe who have recognised native title rights around Singleton, the site of Australia's largest groundwater licence. In addition, ALEC acknowledges Kaytetye, Warlpiri, Alyawarr, Anmatyerr, Warumunga and Walmanpa who are culturally connected to the project site.

We pay our respects to their elders past, present, and emerging. ALEC acknowledges Australia's First Nations were self-governing in accordance with their traditional laws and customs, and they never ceded sovereignty of their lands, seas, and waters.

Who we are

The Arid Lands Environment Centre (ALEC) is Central Australia's peak community environmental organisation that has been advocating for the protection of nature and growing sustainable communities in the arid lands since 1980.

Water is fundamental to the work ALEC is engaged in. It is in this context that ALEC engages deeply with water law, governance, management and licensing. We do this through written submissions, community education and advocacy. This includes:

- Collaborating with Running Water Community Press and Arlpwe Art and Culture Centre to develop the Water Justice Project, directed by Maureen Nampijinpa O'Keefe.
- In a first ever due to exceptional circumstances, litigation in the Northern Territory Supreme Court - *Arid Lands Environment Centre Inc.* v *Minister for Environment and Fortune Agribusiness Funds Management Pty Ltd (2022-00087-SC)*. This case challenged the legality of Australia's largest groundwater licence at Singleton Station in the Northern Territory;
- Extensive engagement with the Productivity Commission's National Water Reform 2020 alongside Environment Centre Northern Territory;
- Extensive engagement with Territory water law, water reforms and water planning.
- ALEC staff appointed as members of the Ti Tree and Western Davenport Water Advisory Committee (TTWDWAP) and previously the Alice Springs Water Advisory Committee;
- Hosting public information sessions on the 11 May 2021 and 1 September 2022 about the Singleton Station water licence, to audiences of approximately 50 and 80 respectively;
- Presenting at the Australian Water Association's 2022 national drinking water conference on the topic 'Climate change, drinking water and Central Australia';
- Presenting at the Australian Water Association's 2022 Territory water conference on the topic 'Contested futures: groundwater dependent ecosystems in the Northern Territory'.

Title page images: *Top - Large Corymbia aparrerinja at Singleton Station approximately 4km north of the proposed borefield; bottom - Day 1 of the Supreme Court case in Mparntwe/ Alice Springs in 2022*

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Executive Summary

Groundwater across the arid lands

The Arid Lands Environment Centre's submission has an almost exclusive focus on groundwater. It is groundwater that sustains the majority of environments, communities and socio-cultural values across the arid lands.

It is groundwater that enables the most complex and climate resilient habitat across the arid lands to thrive. These environments are hotspots for biodiversity. The presence of shallow groundwater systems transforms arid sandplain environments and narrow alluvial channels into regions of abundance and diversity. Shallow groundwater systems are the oases of the desert and play an existential and under appreciated role across the arid lands. Groundwater in these regions already has many uses. This is a reality observed the world over.[1]

Across the arid lands, it is water sites that have historically been locations of colonial conflict and dispossession and in 2024, it is the management of groundwater which shapes contemporary conflicts around water and new waves of dispossession across the arid lands. A new National Water Agreement will shape the water futures across the arid lands.

Whilst groundwater sustains much of inland Australia, the National Water Initiative and National Water Reform 2020 do not adequately recognise the unique function and role of groundwater across these vast landscapes. The management of groundwater requires specificity to ensure its extraction is safe and sustainable. This is not currently captured by the NWI or National Water Reform 2020. Groundwater systems are fundamentally different to surface water systems and the application of the existing NWI principles upon groundwater systems will have dire consequences.

The function of groundwater is deeply tied to place, it is in situ water. Its movement across space is vastly different from surface water systems. Unbundled groundwater and tradable groundwater, inherently carry colonial logics of dispossession. Water is tied to land. There is a major tension between two-way learning and relations around water in the context of groundwater that is separated from land and tradable.

National Water Reform 2024

ALEC provides extensive feedback on 4 key areas of National Water Reform 2024, providing 35 recommendations across (i) water entitlements and planning, (ii) environmental management, (iii) water pricing and water trading and (iv) community engagement.

Northern Territory context

ALEC's submission provides extensive scrutiny of the Northern Territory Government's approach to the law, governance and management of water. We assess its progress on NWI principles, objectives and key outcomes. ALEC uses nine case studies across planning and licensing. These demonstrate the dire and broken system that is operating across the Northern Territory, whereby many stakeholders feel disenfranchised, environmental and cultural values that depend on water are being lost and the opportunities for optimising consumptive use of water are being lost.

[1] **Tydecks, L., Hernández-Agüero, J.A., Böhning-Gaese, K., Bremerich, V., Jeschke, J.M., Schütt, B., Zarfl, C. and Tockner, K., 2023**. Oases in the Sahara Desert–Linking biological and cultural diversity. *Plos one*, *18*(8), p.e0290304.

Recommendations

Recommendation 1: The new NWA establishes national water standards for water legislation, water plans, community engagement and consultation and the hiring and use of consultants.

Recommendation 2: In the new NWA there are binding provisions around integrated environmental water, waterways and catchment management.

Recommendation 3: The NWA must reaffirm its commitment to statutory water plans

Recommendation 4: The NWA process must review the implications of the Singleton Station groundwater licence case in the Northern Territory Supreme Court when evaluating the compliance of the Northern Territory to its NWI commitments.

Recommendation 5: NWA must state that the development of statutory water plans must be accompanied by community consultation and engagement, including the formation of water advisory committees.

Recommendation 6: NWA must strengthen and clarify the role of objectives in statutory water plans (see case study 2)

Recommendation 7: NWA commits that statutory water plan must include monitoring and reporting, adaptive management and risk assessments.

Recommendation 8: NWA includes clear principles for adaptive management according to best-practice, including risk based limits to where adaptive management principles should and should not be applied..

Recommendation 9: Statutory water plans include objectives for environment and culture which are explicit that their water quantity requirements are met and their water quality needs are maintained.

Recommendation 10: The NWA states that there is a requirement for a statutory definition of ESLE or its equivalent in all state and territory water legislation..

Recommendation 11: NWA states that this statutory definition for ESLE must not be based on volume or storage

Recommendation 12: This statutory definition for ESLE must ensure that there is no 'compromise those key environmental assets, or ecosystem functions and the productive base of the resource'.

Recommendation 13: NWA states that water mining is not permitted in the arid zone apart from the exceptional circumstances of a). meeting the essential needs of drinking water (excluding stock) or b). buffering ecosystem decline from climate change, when all of the following conditions are met:

- Never without a water allocation plan
- They are non-renewable water resources (i.e. in areas receiving less than 300 mm of rainfall which are cut-off from recharge. (Renewable water resources should never be mined anywhere.)

- In conjunction with comprehensive water demand reduction
- The express approval of Traditional Aboriginal Custodians has been obtained.

Recommendation 14: A new NWA clearly states that climate change modelling must be accounted for in statutory water planning.

Recommendation 15: A new NWA is accompanied by a national climate modelling program across Australia, with the most up to date regional climate change projections.

Recommendation 16: NWA is accompanied by a national report on climate change impacts on water resources

Recommendation 17: In developing an environmental sustainable level of extraction (or estimated sustainable yield as described in the NT) within a statutory water plan, climate change modelling must be taken into account.

Recommendation 18: NWA states that undeveloped and underdeveloped water basins must take a precautionary approach to water allocations to mitigate the uncertainty and risk associated with climate change impacts to water resources.

Recommendation 19: NWA states that water plans 'include priorities, actions and rules that cover drought conditions, as well as mechanisms for dealing with more extreme scenarios, including clear triggers, roles and responsibilities for actions and a hierarchy of uses'.

Recommendation 20: NWA strengthens and clarifies how groundwater dependent ecosystems are to be managed through the establishment of clear standards

Recommendation 21: NWA states that the water requirements of groundwater dependent ecosystems must be met.

Recommendation 22: GDE identification and mapping must occur across the area of statutory water plans

Recommendation 23: A new NWA must result in the development of national maps of surface water and groundwater dependent arid zone aquatic ecosystems

Recommendation 24: Accompanying the NWA is a mapping program of evolutionary refugia and ecological refuges

Recommendation 25: the NWA must state that ecological refuges and evolutionary refugia must be conserved and protected.

Recommendation 26: key threatening processes that pose significant risk to ecological refuges must be identified nationally.

Recommendation 27: Vulnerability assessments to determine the climate sensitivity and likely persistence of key habitats.

Recommendation 28: NWA is accompanied with a national mapping program to identify key hydrological processes that support the surface water and groundwater dependent arid zone aquatic ecosystems.

Recommendation 29: Risk assessment for aquatic ecosystems and groundwater dependent vegetation is developed across the arid zone, so as to understand the key threats.

Recommendation 30: Identification and mapping of climate change refugia across statutory water plan areas.

Recommendation 31: NWA recognises that groundwater dependent ecosystems function as climate refugia.

Recommendation 32: The NWA must make clear that policies like the NTWAPF are inappropriate, especially in relation to its treatment of arid zone aquifers and presumption of the acceptability of mining stored groundwater and will be non-compliant with a new national agreement.

Recommendation 33: Groundwater trading does not expand across the arid zone

Recommendation 34: NWA is explicit that stock use must be regulated and also pay water management costs similarly to all other industrial users of water.

Recommendation 35: NWA establishes community engagement standards that are based on the International Association of Public Participation.

1. The unique considerations, history of conflict and future for water in the arid lands

> 'If the 19th century was dominated by the acquisition of land and the 20th century was dominated by the acquisition and control of oil and energy resources, then the 21st century will be dominated by the politics of water'.[2]

Arid zone water

As is widely understood, water is fundamental to the health, sustainability and viability of the arid land regions. This is unsurprising as water underpins everything: it dictates where people live, where biodiversity thrives and how culture is maintained. Water is life; everything comes back to water.

In Central Australia, ephemeral rivers traverse landscapes tracking million year old paths, permanent waterholes sustain life and act as critical refugia in climatically stressed environments. With low rainfall and high evaporation, local groundwater systems are replenished by rainfall runoff or occasional river flows; and ancient groundwater systems hold water which connects and sustains much life on the surface.

There are two key factors which shape the unique relationship between the arid lands and water: (1) these are definitionally water scarce environments, where the presence and absence of water is highly variable, and (2) they are almost entirely dependent on groundwater for some or all of their function. Due to the fundamental role of groundwater across the arid lands, ALEC's submission has an almost explicit focus on the water systems found below the surface.

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[2] **Eamus, D, Froend, R, Loomes, R, Hose, G, Murray, B, 2006**. 'A functional methodology for determining the groundwater regime needed to maintain the health of groundwater-dependent vegetation'. *Australian Journal of Botany*, *54*(2), pp.97-114.

It is groundwater that sustains the most complex and climate resilient habitat across the arid lands. These environments are hotspots for biodiversity. The presence of shallow groundwater systems transforms arid sandplain environments and narrow alluvial channels into regions of abundance and diversity. Shallow groundwater systems are the oases of the desert and play an existential and under appreciated role across the arid lands. Groundwater in these regions already has many uses. This is a reality observed the world over.[3]

Arid zone water places are an epicentre for colonial conflict

Water is a place of contest in arid zones. Water holes, which are frequently surface expressions of groundwater and terrestrial groundwater dependent ecosystems are hubs of culture and sustenance for humans and non humans alike. There is a history of degradation and conflict. Powerful writing[4] and speeches detail the history of poisoning, watering stock and deliberate destruction of waterholes and killing culture. This continues. Waterways and water holes are being destroyed by wandering stock and unregulated extraction from stock bores.

The Northern Territory Government continues this trajectory with Northern Territory Water Allocation Planning Framework, a simplistic and anachronistic document which as a starting position assumes that 80% of water stored in our vital aquifers can be taken for consumptive use. The failure to recognise the manifest shortcomings of this document speaks volumes of where we are at with water resources management in the NT.

For the most part the water resources in the arid lands e.g Mereenie Aquifer, Ti Tree Water Control District have just a few groundwater users often many tens or even hundreds of kilometres apart with quite different considerations. In these settings trading water is not simple and not helpful in efficiently allocating the resource. It essentially commodifies resources that already significantly underpin culture. It also gifts extraction entitlements to the first comer, not the best idea, who may then realise an enormous benefit down the track when they have the monopoly on water entitlements in a fully allocated system. This opportunity for "big agriculture", places pressure on the regulator to make large and hasty groundwater allocations, introducing unnecessary risks and throwing away the opportunity for optimising access to rare arid lands groundwater resources.

In our submission we include a case study of the Western Davenport Water Allocation plan where an enormous volume of groundwater is allocated for extraction, resulting in drawdown enough to damage or destroy groundwater dependent ecosystems over at least 100 km. This is done against the explicit wishes of the Traditional Owners and results in new rights and windfall profits for large irrigators, it is therefore hard to not see this as just another step in the continuing colonisation of these lands. A focus of our submission is how to stop this. This includes recognition of the vital importance of all arid zone groundwater dependent ecosystems and prioritising getting in place the fundamentals for good "two-way" water resources management, including contemporary water resources legislation over. We also emphasise the importance of First Nations voices being able to directly report their experience of water resources management through this process as these voices are repeatedly sidelined in water allocation planning processes.

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[3] **Tydecks, L., Hernández-Agüero, J.A., Böhning-Gaese, K., Bremerich, V., Jeschke, J.M., Schütt, B., Zarfl, C. and Tockner, K., 2023**. Oases in the Sahara Desert–Linking biological and cultural diversity. *Plos one*, *18*(8), p.e0290304.

[4] https://www.caama.com.au/2023/08/11/once-the-water-dries-up-thats-it-there-is-nothing-else/

Looking Forward

National Water Reform 2024 (**NWR 2024**) will play a key role in shaping the many and varied water futures across the arid lands.[5] This is a huge area of this country's landmass, where the arid and semi-arid lands make up 70% of the Australian continent.[6] The governance and management of water will foster the transformation or demise of these water scarce regions. Right now we are seeing in real time the risks of catastrophic water resource management across the Northern Territory.

With hope, ALEC welcomes the opportunity to provide comment to the Productivity Commission and NWR 2024. ALEC welcomes the areas to be assessed as part of NWR 2024 Terms of Reference:

- progress in jurisdictional adoption of NWI principles, objectives and key outcomes and, where not adopted, issues that may influence implementation, and the opportunity costs of not doing so
- outcomes to date of the NWI and related water reform efforts, taking account of other reform drivers
- where practicable, implications for key water security and management challenges for Australia, including economic, environmental, social and cultural.

ALEC's submission

ALEC's submission first emphasises the importance of groundwater. Then we highlight water justice principles that should be central to water resource management across the arid lands. We also bring attention to the unique water resource management context here in the Northern Territory. The rest of the submission is structured around National Water Initiative renewal advice by area. ALEC provides comment on:

- Water entitlements and planning
- Environmental management
- Trading and markets
- Community engagement

Weaving this story together are nine case studies from the Northern Territory which are found in the appendices at the bottom of the document. Our submission draws upon our extensive engagement with water in the Northern Territory, using these case studies across licensing, planning and policy. These demonstrate the outstanding failures and structural issues with water law and governance in the Territory. We also highlight the existing non-compliance with the National Water Initiative (**NWI**) by the Northern Territory Government.

Our submission addresses the perverse and non-compliant water resource management system that is currently unfolding across the Northern Territory. These insights, alongside other Territory stakeholders, are critical to understanding how a new National Water Agreement (**NWA**) will only have relevance in the Northern Territory, if these dire realities are acknowledged and acted upon.

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[5] This submission will use the term arid lands as an umbrella term, to include the 70% of the Australian continent that is semi-arid, arid or a desert. This mirrors the approach taken by Steve Morton in his book 'Australian Deserts'.
[6] Department of Climate Change, Energy, the Environment and Water, 2021. 'Outback Australia - the rangelands. Accessed 1 February 2024, here.

2. Groundwater: an especially vital source of water in arid lands

Groundwater is important across Australia, nationally constituting 30% of overall consumptive use.[7] However, in the arid lands there is no other significant source of water for consumptive use.

The management considerations in arid zone aquifers are also vastly different because of how they are recharged. Often recharge is sporadic and stored water may be of of ancient origins. Furthermore the dramatic differences between rainfall and evaporation, means that groundwater is not only the main consumptive resource but also the main source of water for environments and culture. The starting assumption should be that resources have incredible in situ value. Due to low population densities, cultural differences and lack of monitoring these values are often not well understood.

Figure 1. National groundwater use as a percentage of total water use (Source: Harrington N and Cook P, 2014, Groundwater in Australia, National Centre for Groundwater Research and Training, Australia.)

[7] Geoscience Australia, 2023. 'What is Groundwater'. Accessed 1 February 2024, see here.

3. Water justice principles

Water justice is central to ALEC's vision for the sustainable use of water resources. These principles centre notions of distributive, procedural and recognition-based justice, as well as recognising the unique socio-cultural relations to water. These principles were developed with Environment Centre Northern Territory in our joint submission to the NWR 2020. The five key principles around water justice are that:

- Traditional Owners and their representative institutions are centred in all decision making around water management and use;
- Water values of ecological, cultural and social significance are recognised and protected;
- Basic water needs are met for all;
- Water resource management is inclusive and participatory;
- Water is recognised as a public good that should be looked after.

4. The Northern Territory context

The water resource management system is broken in the Northern Territory. The Territory's regulation of water is not fit for purpose and it is failing to safely and effectively manage water resources to environment, culture, people and economy. It is unsurprising then that 'water law and governance in the NT is amongst the poorest in the country'[8] Arid Lands Environment Centre has had first experience of this which is described in the case studies. Two examples are the Western Davenport Water Allocation Plan enabling the destruction of groundwater ecosystems over a 100km stretch of land against the wishes of the Traditional Owners, the Georgina Wiso Water Allocation Plan being gazetted without any response to community submissions.

The Territory is already unable to meet its existing commitments under the NWI. As the Professor of Law at the University of Western Australia, Alex Gardner, states 'the Water Act and Water Regulations provisions around water planning and allocations are not consistent with the NWI commitments'.[9]

The Territory Government acknowledges that its water resource management system is unfit for purpose, stating as part of the Territory Water Plan that its legislation 'does not provide all the necessary mechanisms for best practice water resource management in the current context of climate change, growing competition for water and community expectations around governance and accountability.'[10] As a result, the Territory Government has committed to develop a new Water Act by 2026, however there appears to be a cynical effort to fully allocate water resources *before* the new legislation has been developed.

[8] **Environment Defenders Office. 2021.** Deficiencies in the existing water law and governance framework in the Northern Territory.
[9] **Gardner, A, 2024**, p.2. 'Evaluation of the Badu Advisory Report: review of the NT's implementation of the National Water Initiative in relation to water planning'.
[10] Territory Water Plan, p.33.

a. An issue of trust

The Northern Territory government is not trusted to effectively and safely manage water resources. There have been a number of issues in recent years that have undermined trust in the governance of water, this includes:

- the granting of one of Australia's largest groundwater licences at Singleton station which threatens to lower the groundwater table by up to 50 metres, impact up to 40 sacred sites and gifts up to 1 trillion litres of water over 30 years to the proponent for FREE[11][12];
- the development of the largest water plan allocation in the Territory's history for, the Georgina Wiso Water Allocation Plan for 210GL, *without* a water advisory committee;
- anti-democratic changes to the structure of water plans which gut them of almost all meaningful content so as to 'prevent future opportunity for litigation'.[13]
- The Draft Western Davenport Water Allocation Plan which is modelled to lower the groundwater table in a shallow groundwater landscape by at least 5 metres across a 100km stretch, damaging and destroying groundwater dependent trees;
- 18 water experts wrote the Territory Chief Minister regarding poor practice water planning in the Northern Territory.[14]
- The Northern Territory Government developed a policy to destroy 30% of groundwater dependent trees with no scientific basis. The only stakeholder consulted was the proponent who would benefit from the policy.
- A two page policy document[15] that has no scientific basis, which governs water resource allocation decision making for areas outside of water allocation plans, or approximately, 83% of the Territory;
- issues around secrecy and transparency[16][17];
- Attempts at fast-tracked reform without consultation[18];
- issues around a perceived or real conflict of interest within the Department[19][20];
- revelations that all Territorians do not have safe drinking water[21], where drinking water can be contaminated with uranium, heavy metals or high-levels of salts[22][23]; and,

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[11] **Jonscher, S. 2021**. 'Sacred sites and water rights'. ABC. Accessed 1st February 2022.
[12] **Central Land Council. 2021**. 'DOZENS OF SACRED SITES THREATENED BY CONTROVERSIAL NT WATER LICENCE' 1st February 2022.
[13] p.6.
[14] 'Poor practice water planning in the Northern Territory'. See here.
[15]Northern Territory Water Allocation Planning Framework. See here.
[16] **Robinson, L. 2021.** 'ALEC, CLC among objectors to the Singleton Station water licence. NT News. Accessed 1st February 2022.
[17] **Ashton, K. 2020.** 'Labor Government scraps policy scrutiny committees from NT Parliament'. ABC. Accessed 1st February 2022.
[18] **O'Donnell, E, Langton, M, and Jackson, S. 2021.** 'Regressive changes to Northern Territory water laws could undermine Indigenous rights'. The Conversation. Accessed 1st February 2022.
[19] **Walls, J. 2021.** 'Special investigation: Perceived conflicts and secretive governance risks NT's most precious resource, advocates warn'. NT News. Accessed 1st February 2022.
[20] **Northern Territory Auditor-General's Office. 2021, p.124.** November 2021: Report to the Legislative Assembly.
[21] **Grealy, L. and Howey, K., 2020**. Securing supply: governing drinking water in the Northern Territory. *Australian Geographer*, *51*(3), pp.341-360.
[22] **Allam, L and Evershed, N. 2019**. 'Too hot for humans? First Nations people fear becoming Australia's first climate refugees'. The Guardian. Accessed 1st February 2022.
[23] **Kurmelovs, R and Moore, I. 2021**. 'It makes us sick': remote NT community wants answers about uranium in its water supply'. The Guardian. Accessed 1st February 2022.

- the overturning of a 10,000ML licence at Larrimah[24].

Building trust and integrity in the governance of water resources is essential to effective management. Trust reflects social licence and public perception, shaping the motivations of stakeholder participation. The Productivity Commission in National Water Reform 2020 (**NWR 2020**) makes clear the importance of trust in water resource management:

> 'Given the demands on water in Australia, water users and the broader community must be able to trust in water resource management. They need to have confidence that water users are complying with their obligations and that water managers are managing this valuable resource to best effect. In other words, system management should have integrity. The integrity of Australia's water resources management rests on the provision of credible and relevant information combined with effective compliance and regulation. Information plays a critical role in all decision making in water resource management. Robust processes and trusted institutions can provide confidence that water users are complying with their obligations and that water system managers are undertaking their roles to best effect for the benefit of all entitlement holders and the environment. Integrity can be gauged by the degree of trust in water management institutions and systems held by water users, communities and the market. Where there is integrity in water system management, public confidence follows'[25].

The Productivity Commission goes further:

> 'mistrust has also been fuelled by a lack of information, poor communication of the information that is available, and difficulties for stakeholders in accessing, navigating and reconciling available data collections. A lack of transparency around water system managers' decision making, operations and performance has contributed to concerns that they are not being held accountable. Inadequate transparency has also contributed to misperceptions or misinformation about water availability, worsening the relationship between communities and water system managers (and the governments that fund them).'[26]

A new NWA is an opportunity to ensure that states and Territories operate water resource management systems with integrity, transparency and accountability. That water resource management is inclusive and participatory. These are key pillars to restoring trust.

In jurisdictions like the Northern Territory there is no confidence that water resource manager is acting to strike a community balance.

b. Badu Advisory Report

ALEC unconditionally rejects the conclusion of the Badu Advisory Report commissioned report, 'Northern Territory Department of Environment, Parks and Water Security: Review of the NT's implementation of the National Water Initiative in relation to water planning' dated 13 July 2023. This report was commissioned by the NT Government. The conclusion states 'that NT's water planning processes are consistent with the provisions of the NWI and subsequent guideline documents'[27]. The

[24] **Brann, M. 2021**. 'NT government leaves Larrimah precinct high and dry, revoking 10,000-megalitre water licence'. ABC. Accessed 1st February 2022.
[25] **Productivity Commission. 2021, p.4-5**. 'Ensuring the integrity of water resource management Supporting Paper E: National Water Reform 2020 Inquiry Report no.96: 28 May 2021'.
[26] Ibid p.11.
[27] Badu Advisory, 2023, p.15. 'Northern Territory Department of Environment, Parks and Water Security Review of the NT's implementation of the National Water Initiative in relation to water planning 13 July 2023'.

NT Government celebrated this report with headlines published by the Territory Government that 'water planning in the Northern Territory on track'.[28]

As outlined above, and emphasised in detail below, the Territory Government is not trusted around the provision of water. The water resource management system is broken and unfit for purpose. It is simply not true that the Territory is compliant with the NWI. This faux reality promoted by the Territory Government is further inflaming tension.

c. Governance issues

Research

The regulation and management of water resources needs to be disconnected from development agendas. For example, the Mapping the Futures was a five year, $10 million Government initiative to assess natural resource development potential in strategic locations.

The Department of Environment, Parks and Water Security secured money from the Territory Government for investigations on the basis that it will 'unlock' areas for development. This becomes problematic when the investigations are not as promising as promised, the regulator is in a bind of having to weaken its regulation or admit its investment will not 'unlock' as much development as promised. This pressurised situation is highly inappropriate for public servants to carry out their work in the public interest.

Regulatory separation

There is minimal regulatory separation in the Northern Territory.

Whilst it is welcome that the CEO of the Department of Environment, Parks and Water Security is no longer the Controller of Water Resources and is board member of NT Land Corporation, a developer, the existing realities are still not fit for purpose.

Oversight of water resources management needs to be separated from the water resources manager. That is, the Office of Water Security employees do not sit within the same department responsible for delivering water resources management functions. This is problematic as there needs to be cultural separation between organisations but also scrutiny of water resources management also entails scrutiny of senior staff to whom they may report to.

To restore public confidence we also recommend statutory reviews of water allocation plans as required by the NT Water Act 1992, should not be undertaken by the department that implements them.

Inability of states and Territories to implement contemporary water legislation

It is unlikely that robust and adequate legislation will ever be delivered in the Northern Territory without being tied to Federal Government directives and financial incentives, given power relations in the NT

[28] Department of Environment, Parks and Water Security, 2023. 'Water planning in the Northern Territory on track' Published 5 October 2023, accessed here.

As is widely understood, Northern Territory law and governance of water is broken and fundamentally failing. This makes calls within the NWA for national standards around water resource management critical, for example around water plans, legislation, community engagement and consultation and the hiring and use of consultants.There are fundamental flaws in the governance arrangements in the Northern Territory.

Recommendation 1: NWA establishes national water standards for water plans, community engagement and consultation, legislation and the hiring and use of consultants.

5. Water entitlements and planning

a. Catchment-based management

ALEC strongly supports catchment-based water management. The promotion of integrated environmental water, waterway and catchment management in NWR 2020 creates a strong case for strengthening provisions in the NWR 2024. Siloed allocations of water, where major conflict emerges between 'users' at the licence-level is an antiquated approach to water resource management in 2024. This is especially true in greenfield regions where water resources are not already over-allocated.

It is well understood that the presence or flow of water across landscapes is connected to other environmental, (threatened species, biodiversity hotspots, land-use change), cultural (sacred sites, cultural values), social (recreational, mental, social and physical health) and economic (regional development, employment) values and processes. Altering the presence or flow of water creates conflict between different value systems which has plagued water allocation planning across the continent. In non-over allocated and exhausted systems, a new NWA must clearly outline guidelines for best practice water management, which incorporates strong provisions for environmental water, waterways and catchment management.

ALEC provides several examples in the case studies below which highlight the major deficiencies that are arising due to existing non-compliance by the Northern Territory Government in non-over allocated systems. The current failure to adequately engage the community, address Aboriginal and Torres Strait Islander interests in water, manage environmental concerns, create binding water plans and effectively licence the extraction of water could be managed by whole of catchment management.

Catchment-based management has been adopted before in the Northern Territory, with the 'Daly River Management Advisory Committee' which functioned from 2006-2013. This body was 'an independent community committee with a mandate to bring a diversity of skills, perspectives and opinions to bear on land use, conservation and sustainable use of resources'[29]. It united key stakeholders which included Aboriginal landowners, pastoralists, farmers, conservationists and government representatives. There was also an Aboriginal Reference Group which represented Traditional Owners within the catchment. This body was able to make sweeping changes for the benefit of the entire catchment which included a moratorium on land clearing, a 'report on river health in the Daly Catchment', and improved oversight around water quality through the creation of the 'Daly River Monitoring Advisory Group', which had plans to develop a 'River Health Monitoring Strategy and Plan for the Daly River' before the committee was discontinued[30]. It is important to note that this happened in the context of the Northern Territory which has no native vegetation legislation, no biodiversity strategy and has never conducted state of the environment reporting. A catchment-based management approach lifted the floor on governance and management across the entire catchment area.

Other jurisdictions have also adopted catchment-based approaches around water management and governance. For example Federally, the Murray Darling Basin Authority has been established, while at the state level catchment management authorities have been established in NSW and Victoria. In Victoria the *Catchment and Land Protection Act* 1994 was established to oversee this process.

A catchment-based approach complements water allocation plans and water advisory committees, creating a more robust and comprehensive approach to water licensing. It improves the levels of oversight, transparency and communication between key stakeholders, helping to break down the siloed approach taken to environmental regulation. Instead, by adopting a holistic and integrated method, water governance can make major steps to becoming both contemporary and coordinated.

ALEC implores a new NWA to recommend binding provisions around integrated environmental water, waterway and catchment management in NWR 2024.

Recommendation 2: In the new NWA there are binding provisions around integrated environmental water, waterways and catchment management.

b. Statutory water plans

The existing NWI placed a fundamental role for 'transparent, statutory-based water planning' as a key element of the 2004 national agreement. In addition to paragraph 23(ii), paragraph 15, paragraph 37, ScheduleB(i) and Schedule E all highlight the key role statutory water plans play in the NWI agreement.

Schedule B(i) provides a particularly clear definition for water plans, 'statutory plans for surface and / or groundwater systems… developed in consultation with all relevant stakeholders on the basis of best scientific and socio-economic assessment, to provide secure ecological outcomes and resource security for users'.

[29] Daly River Management Advisory Committee, 2012, p.1. Strategic Plan 2012-2015.
[30] Ibid.

The Productivity Commission's Inquiry Report - National Water Reform 2020 (**NWR 2020**) reinforced their critical role, stating that '[w]ater planning and entitlements frameworks together with environmental provisions have provided the foundations for sustainable resource management.'[31].

Territory regulatory context for statutory water plans

It is already recognised that 'water law and governance in the NT is amongst the poorest in the country'.[32] Within the Water Act 1992 (NT) there are few binding provisions, a lack of key definitions for terms such as 'water resource management' and 'estimated sustainable yield', huge discretionary powers for decision-makers, with few limits on the scope of those discretionary powers.

The Territory Water Minister is responsible for planning processes. Section 22B(4) states that 'water resource management in a water control district is to be in accordance with any water allocation plan declared in respect of the district', although as mentioned above 'water resource management' is not defined in the Water Act. Section 22B(5) outlines 'the water allocation plans for a water control district are to ensure that' for a-d factors. Section 90(1) outlines a list of factors a-k that the decision-maker 'must take into account'.

To be understand whether the powers and limitations of 22B(4), ALEC refers to the recent decision in the Northern Territory Supreme Court of which ALEC was a party, *Mpwerempwer Aboriginal Corporation RNTBC* v *Minister for Territory Families & Urban Housing as Delegate of the Minister for Environment & Anor and Arid Lands Environment Centre Inc* v *Minister for Environment & Anor* [2024] NTSC 4 (**Singleton Supreme Court case).**

The court found that 'the Minister did not have a statutory obligation to "comply with" s 22B(4) of the Act'[33]. The court also found that 'planning and management of the water resource in a water control district was and remains the meaning of 'water resource management'.[34]

As highlighted above, to be compliant with the NWI, statutory water plans must be legally binding. The Territory Government is non-compliant with Paragraph 23(ii).

There are major deficiencies in water planning in the Northern Territory as demonstrated by Case Study 1: Georgina Wiso Water Allocation Plan.

Recommendation 3: NWA must reaffirm its commitment to statutory water plans

Recommendation 4: The NWA process must review the implications of the Singleton Station groundwater licence case in the Northern Territory Supreme Court when evaluating the compliance of the Northern Territory to its NWI commitments.

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[31] Productivity Commission, p.29, 'National Water Reform 2020: Inquiry Report'.

[32] **Environment Defenders Office. 2021.** Deficiencies in the existing water law and governance framework in the Northern Territory.

[33] *Mpwerempwer Aboriginal Corporation RNTBC* v *Minister for Territory Families & Urban Housing as Delegate of the Minister for Environment & Anor and Arid Lands Environment Centre Inc* v *Minister for Environment & Anor* [2024] NTSC 4, p.36

[34] *Mpwerempwer Aboriginal Corporation RNTBC* v *Minister for Territory Families & Urban Housing as Delegate of the Minister for Environment & Anor and Arid Lands Environment Centre Inc* v *Minister for Environment & Anor* [2024] NTSC 4, p.33.

Recommendation 5: NWA must state that the development of statutory water plans must be accompanied by community consultation and engagement, including the formation of water advisory committees.

Recommendation 6: NWA must strengthen and clarify the role of objectives in statutory water plans (see case study 2)

Recommendation 7: NWA commits that statutory water plan must include monitoring and reporting, adaptive management and risk assessments.

Recommendation 8: NWA includes clear principles for adaptive management according to best-practice.

c. Water plan objectives

Schedule E states that states and Territories in preparing water plans include 'the overall objectives of water allocation policies'.

Paragraph 36. Water planning is an important mechanism to assist governments and the community to determine water management and allocation decisions to meet productive, environmental and social objectives

A new NWA needs to strengthen and clarify the role of objectives in statutory water plans.

This is vital as the Territory Government in recent years has attempted to widely undermine the intent of water plan objectives. In particular objectives that are intended to protect and conserve ecological and cultural values (Case Study 2)

The objectives in the Draft WDWAP majorly contrasts with the previous 2018-2021 WAP and 2021-22 WAP plan where the objective was to '[m]eet the environmental water requirements of water dependent ecosystems'. The 2011 plan for the region had an objective to 'To maintain and protect good water quality and flows in water dependent environmental sites'[35]

There is no attempt for the objectives or its outcomes to do anything to conserve or protect ecological values. They are vague knowledge gathering exercises where the associated outcome is for there to be an 'improved understanding' and that 'the condition of GDEs is known and monitored as far as practicable, and bizarrely around the perception of the public that 'people are confident that key environmental values are…'. None of these words have any meaning, the Northern Territory Government has not told us what an 'improved understanding' means. They are vague and they obfuscate any responsibility for environmental protection.

This objective and its associated outcomes treat the environment with contempt. There is no attempt to even feign an interest to actually protect the environment or GDEs, rather the focus is to conduct a non-descript research program and evaluate success on whether the 'people are confident' in the Government's messaging that there are no problems around water resources.

This analysis is mirrored for the cultural value objectives.

[35] p.19.

These objectives have been largely adopted as the same in the GWWAP.

Contrast the objectives for the environment and culture with the objectives for rural stock and domestic, where the amount of water is to be 'met' and the quality of water is to be 'maintained'. The Northern Territory Government's objectives in these plans are explicit that cattle have more rights to water than environmental and cultural values. It is damning and this approach to the objectives within statutory water plans is condemned.

Recommendation 9: Statutory water plans include objectives for environment and culture which are explicit that their water quantity requirements are met and their water quality needs are maintained.

d. 'Environmentally-sustainable levels of extraction'

An objective of the NWI at Paragraph 23(iv) is to 'complete the return of all currently overallocated or overused systems to *environmentally-sustainable levels of extraction* (ESLE) *;*' and an outcome at Paragraph 25(v) to 'implement firm pathways and open processes for returning previously overallocated and/or overdrawn surface and groundwater systems to *environmentally-sustainable levels of extraction*'. This term is fundamental to water resource allocation[36]

ESLE is defined as the level of water extraction from a particular system which, if exceeded would compromise key environmental assets, or ecosystem functions and the productive base of the resource'.[37] This creates a conceptual limit of resource allocation to not compromise those key environmental assets, or ecosystem functions and the productive base of the resource'.

This is reiterated in NWR 2024, that '[t]he ultimate objective of providing water for the environment is to improve the health of rivers, wetlands and other water-dependent ecosystems — not simply a volume of water.'[38].

Currell and Ndehedehe (2022) whole heartedly agree, and make their point abundantly clear:

> 'Aquifers should not be described in terms of their total storage when considering sustainable yields or 'safe' extraction rates (this topic is covered in detail in Sections 2 and 3 of this report). It is the water flows to and from an aquifer sustaining other aspects of the water cycle and dependent values (e.g., groundwater flows to streams, springs and other aquifers), that is the most important factor in assessing the sustainable yield from an aquifer (not storage volume) (Theis, 1940; Alley et al., 1999; Ponce, 2007). These flows are normally very small in comparison to the total water in an aquifer's storage; extracting even small proportions of overall storage can have significant water cycle consequences (e.g., reduced baseflows and/or loss of groundwater dependent ecosystems). Viewing the aquifer as a single connected 'bucket' of stored water that can be extracted without impacting the broader water-cycle, risks serious harm to water users and the environment (Alley et al., 2002; Bierkens and Wada, 2019).'[39]

[36] See its use in the Water Act 2007 (Cth)
[37] National Water Initiative 2004, p.29, Schedule B(i): Glossary of Terms.
[38] Productivity Commission, p.103, 'National Water Reform 2020: Inquiry Report'.
[39] Currell, M, Ndehedehe, C, 2022, p.12. 'Hydrogeology and management rules to ensure protection of groundwater dependent values'.

Territory regulatory context

This approach contrasts directly with that of the Northern Territory Government which develops an estimated sustainable yield (ESY).

ESY is not defined in the Water Act which is deeply problematic. As a result there have been varied non-statutory definitions, and a major shift in the construction of ESY in the last few years.

For example, compare the definition of 'estimated sustainable yield' in the Ti Tree WAP 2020-2030:

> **'To meet the requirements of section 22B of Water Act 1992, the ESY is the amount of water that can be taken from the water resource to support beneficial uses without compromising key cultural and environmental values, or ecosystem functions or the productive base of the resource or declared water quality standards, criteria or objectives.'**

With the definition of 'sustainable yield' defined in the Berry Springs WAP 2016-2026:

> **'the amount of groundwater that can be extracted from an aquifer on a sustained basis without impairing water quality or causing environmental damage'**

And the definition of 'sustainable yield' in the Western Davenport WAP 2021-2022:

> **'The level of water extraction from a particular system which, if exceeded would compromise key environmental assets, or ecosystem functions and the productive base of the resource.'**

There is great variation between these definitions, with some emphasising cultural values, some water quality and others focused solely on ecological considerations.

And more recent definitions

And the definition of sustainable yield in the Draft Western Davenport WAP 2023-2033

> **'The estimated sustainable yield means the amount of water that can be allocated from the water resource to support declared beneficial uses that is sustainable.'**
>
> **In addition there are considerations for 'determining the estimated sustainable yield', which includes 'available data concerning inflows, recharge, outflows, evapotranspiration, and existing storage, in order to reasonably estimate the water available for consumptive use' [emphasis added]**

And the definition of sustainable yield in the Georgina Wiso Water Allocation Plan 2023-2031

> **'Amount of water that can be allocated from the water resource to support declared beneficial uses that is sustainable. Section 3.4 of this plan' Section 3.4 includes 'the volumes of water in storage'.**

As is clear, the most recent approach taken by the Northern Territory Government is increasingly focused on using volume of storage as a measure of success, decoupled from the dependent values on the surface.

The Northern Territory Government confirmed its intention to deplete groundwater storage as the basis for its ESY figure. In explaining what the public needs to know about the Draft Western Davenport Water Allocation Plan, the Executive Director of Water Resources, told the ABC's Country Hour that:

> 'this plan ensures that 97% of the groundwater resource in this district remains there to support environmental flows and 3% of that water will support public water supply and economic development in the region… as we talked about 97% of the water is already allocated to the environment'.

It is nonsense to allocate water for the environment if it is out of reach of the ecosystems which depend upon it. As we expand in Case Study 3: Singleton Station Groundwater licenece

This approach has also been repeated in the Georgina Wiso Water Allocation Plan. As is stated in 3.4 of the statutory WAP document, 'The estimated sustainable yield is based on the understanding the inflows and outflows of the water resource, **including the volumes of water in storage**, combined with the inputs (recharge, inflow) and outputs (discharge, outflow and evapotranspiration) and throughflow.'[40] [emphasis added]. In the non-statutory background document of the Georgina Wiso WAP, it states:

> The Georgina and Wiso Basins are very extensive, **with a stored volume of 740,000,000 ML. Taking the ESY of 210,000 ML/year for 100 years means 97% of the current water remains stored**. This percentage does not account for recharge events that will also occur during this period. **Relying on actual stored water is a more precautionary approach** as it does not rely on highly variable recharge or uncertainties about climate change. [emphasis added]

The Northern Territory Government approach is non-compliant with the ESLE as per the NWI.

Recommendation 10: The NWA states that there is a requirement for a statutory definition of ESLE or its equivalent in all state and territory water legislation..

Recommendation 11: NWA states that this statutory definition for ESLE must not be based on volume or storage

Recommendation 12: This statutory definition for ESLE must ensure that there is no 'compromise those key environmental assets, or ecosystem functions and the productive base of the resource'.

Recommendation 13: NWA states that water mining is not permitted in the arid zone apart from the exceptional circumstances of a). meeting the essential needs of drinking water (excluding stock) or b). buffering ecosystem decline from climate change, when all of the following conditions are met:

- Never without a water allocation plan
- They are non-renewable water resources (i.e. in areas receiving less than 300 mm of rainfall which are cut-off from recharge. (Renewable water resources should never be mined anywhere.)
- In conjunction with comprehensive water demand reduction
- The express approval of Traditional Aboriginal Custodians has been obtained.

e. Climate change modelling in statutory water plans

ALEC strongly agrees with NWR 2020 and its emphasis that significant enhancements should be made to a renewed NWI to the 'planning element, to reflect contemporary best practice and ensure

[40] p.9.

climate change is taken into account in water planning'[41] and 'incorporate changes in the availability of water due to climate change'[42]

The NWR 2020 goes further stating that 'In relatively undeveloped and developing water systems, there is an opportunity to set consumptive and environmental shares in ways that manage the risk of future resource reductions as a result of climate change.' In the section titled: 'Addressing climate change in relatively undeveloped and developing areas', these regions 'need to consider climate change, and the likely reduction in future surface water and groundwater availability. This will increase transparency of planning decisions, reduce the risks of future overallocation, help to maintain the reliability of entitlements and allow water users to better manage their risks'

A new NWA must recognise that climate change considerations are central to water resource management. Climate change will have a substantial impact on remote and urban water futures across the country.

Recommendation 14: A new NWA clearly states that climate change modelling must be accounted for in statutory water planning.

Recommendation 15: A new NWA is accompanied by a national climate modelling program across Australia, with the most up to date regional climate change projections.

Recommendation 16: NWA is accompanied by a national report on climate change impacts on water resources

Recommendation 17: In developing an environmental sustainable level of extraction (or estimated sustainable yield as described in the NT) within a statutory water plan, climate change modelling must be taken into account.

Recommendation 18: NWA states that undeveloped and underdeveloped water basins must take a precautionary approach to water allocations to mitigate the uncertainty and risk associated with climate change impacts to water resources.

Recommendation 19: NWA states that water plans 'include priorities, actions and rules that cover drought conditions, as well as mechanisms for dealing with more extreme scenarios, including clear triggers, roles and responsibilities for actions and a hierarchy of uses'.

[41] P.6.
[42] p.82.

6. Environmental management

Managing environmental values across the arid lands must account for the unique dependencies between surface water and groundwater. This is the arid zone, water is a scarce resource and groundwater plays a disproportionately fundamental role. Ecological complexity, diversity and abundance are linked to the presence or absence of (ground)water.

Therefore, it is integral that environmental management in the arid zone centres and conserves groundwater resources that interact with surface water systems. They create ecological conditions that allow for regional arid and semi-arid systems to be transformed into vibrant oases. These sites of complexity are also sites of climate refugia. They have access to a permanent water supply of water which is not at the same risk of impact as surface water systems.

These water sites across the arid lands are also shaped by unique spatial geographies, moulded across deep time. For example, the Lhere Pinta (Finke River) is regarded as the world's oldest river, where parts of the river have followed approximately the same path for 100 million years and other parts of the river are approximately 340 million years old.[43] These are ancient systems of geology and hydrology.

These ancient landscapes are storied. Water sites interact strongly with the embedded cultural values and widespread social connections. Environmental management does not just concern the wellbeing of a particular tree, species or ecosystem. There are unique ontologies and epistemologies that are also tied to the conservation and protection of particular sites and places.

A new NWA has to re-conceptualise the role of water across a landscape. It is not just a resource to be managed.

a. Groundwater dependent ecosystems in the arid zone

There are three main groups of groundwater dependent ecosystems (GDEs), (1) terrestrial, ecosystems that rely on the subsurface presence of groundwater, all vegetation ecosystems (2) aquatic, ecosystems that rely on surface expression of groundwater - may include rivers, wetlands and springs and, (3) subterranean, this includes cave and aquifer ecosystems, e.g. stygofauna. Groundwater dependent ecosystems are either fully or partially dependent on groundwater to function.

GDEs in the arid and semi-arid lands, function as oases of the desert. The importance of GDEs in the arid zone is a growing area of research.

Groundwater dependent water sites play a key role as water refuges in what are water scarce environments. Sites such as Running Waters and Two Mile on the Lhere Pinte (Finke River) are both fed by groundwater as well as surface water runoff. They are unique and reliable supplies of water.

We also know that groundwater dependent trees play a key role across the arid lands, where they:

- Are climate refugia in a warming and changing climate;
- Are more resilient than surface water systems to climate change impacts;
- Create larger and more productive habitat;
- Can be very old vegetation in a landscape, e.g. river red gums can be up to 1000 years old;
- Key habitat for bird, bats, owls and insects
- Provide conditions for other flora to thrive under the canopy, e.g. wildflowers, bush medicines and other riparian vegetation.
- They are ecological stewards of arid and semi-arid landscapes and due to their significant role GDEs may also hold significant cultural values.
- They link the surface with the sub-surface.

[43] The Australian, 2011. 'The oldest river'.

Groundwater depletion or water mining is a major risk to Terrestrial GDEs. Minor depletion can have significant impacts on the health and condition of GDVs. Impacts vary widely by species in responding to groundwater depletion, where it may trigger complex ecological responses.

Noorduijn et al, (2019) have shown through simulated models that a reduction of 0.5m over 5 years for Terrestrial GDEs, can result in a reduction of evapotranspiration of up to 29%.[44] Froend et al (2004) 'completed a water-stress study to determine a maximum acceptable rate of groundwater level decline of 0.2m / year, with a maximum total drawdown of 1.5m, for Terrestrial GDEs in Western Australia'.[45] Greater mortality may be observed in large trees which rely on more water to maintain physiological performance.[46]

Mitigating the impacts to GDEs is critical. Eamus et al, (2006) developed 'a summary of key questions to be addressed and methods that may be applied in the process of identifying and managing groundwater dependent ecosystems'.[47] Key questions included:

a. 'Which populations or species of an ecosystem are groundwater dependent?

b. If some populations or species of an ecosystem are groundwater dependent, what degree of dependency is expressed?

c. What patterns in groundwater dependency are observed?

d. What processes aer groundwater dependent?

e. What attributes of groundwater (level, flux, hydraulic head, quality) are important to the dependent populations/ species?

f. What are the safe limits to changes in the attributes of groundwater that are important?

g. What is the response function of key species or the community to changes in groundwater regime (supply/ flux/ pressure/ quality or level?

h. What values are assigned by all stakeholders, to the groundwater dependent vegetation of the ecosystem?

i. What are the acceptable limits of change of groundwater (flux/ pressure/ level/ quality) that does not cause unacceptable change in ecosystem composition/ structure/ function or services?

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[44] Noorduijn, S.L., Cook, P.G., Simmons, C.T. and Richardson, S.B., 2019. Protecting groundwater levels and ecosystems with simple management approaches. *Hydrogeology Journal*, *27*(1), pp.225-237.
[45] Froend, R., Loomes, R., Horwitz, P., Bertuch, M., Storey, A. and Bamford, M., 2004. Study of ecological water requirements on the Gnangara and Jandakot mounds under Section 46 of the Environmental Protection Act. *Edith Cowan University, Joondalup, Parameter identification and monitoring program review. A report to the Water and Rivers Commission*.
[46] Challis, A., Stevens, J.C., Mcgrath, G. and Miller, B.P., 2016. Plant and environmental factors associated with drought-induced mortality in two facultative phreatophytic trees. *Plant and Soil*, *404*, pp.157-172.
[47] Eamus, D., Froend, R., Loomes, R., Hose, G. and Murray, B., 2006. A functional methodology for determining the groundwater regime needed to maintain the health of groundwater-dependent vegetation. *Australian Journal of Botany*, *54*(2), pp.97-114.

j. What are the environmental water requirements to maintain the values of the groundwater dependent vegetation of the ecosystem?'

Northern Territory water resource management is out of its depth and unable to answer these questions, too often are they only attempting to identify species that are groundwater dependent. There is a lack of understanding in particular around groundwater dependent vegetation, in how questions b-j could be answered.

A new NWA must stipulate more clearly how groundwater dependent ecosystems are to be managed. A new NWA must ensure that the water requirements of groundwater dependent ecosystems is met.

Recommendation 20: NWA strengthens and clarifies how groundwater dependent ecosystems are to be managed through the establishment of clear standards

Recommendation 21: NWA states that the water requirements of groundwater dependent ecosystems must be met.

Recommendation 22: GDE identification and mapping must occur across the area of statutory water plans

Recommendation 23: A new NWA must result in the development of national maps of surface water and groundwater dependent arid zone aquatic ecosystems

b. Evolutionary refugia and ecological refuges

We quote Davis et al (2013) extensively here. Evolutionary refugia are recognised as:

> 'freshwater habitats that have supported aquatic species on timescales of millions of years. They are permanent, groundwater-dependent ecosystems (subterranean aquifers, discharge or mound springs and relict streams) that support Climate change adaptation guidelines 13 vicariant relicts (species with ancestral characteristics) and short-range endemics (species that only occur within a very small area).'[48]

It goes on stating that:

> 'evolutionary refugia are ecosystems that show a high degree of resistance, or buffering, to climatic change. The presence of a permanent supply of groundwater has enabled some species to persist through climatic changes spanning thousands to millions of years. These species are very vulnerable to local extinction. If the groundwater or surface water expressions of groundwater that supports them disappears the likelihood of extinction is very high because they do not have good dispersal and recolonisation strategies. Populations cannot be rescued by dispersal from other sites. These systems have a high resistance but very low resilience.
>
> Evolutionary refugia must be managed at the aquifer-scale (the Great Artesian Basin and regional and local aquifers) to ensure that permanent water is maintained. Good water quality and habitat condition needs to be maintained or restored by managing at an individual site basis and by 'spring-groups' for mound springs.'

[48] Davis, J, Sunnucks, P, Thompson, RM, Sim, L, Pavlova, A, Morán-Ordóñez, A, Brim Box, J, McBurnie, G, Pinder, A, Choy, S, McNeil D, Hughes, J, Sheldon, F & Timms, B 2013, p.12-13, Climate change adaptation guidelines for arid zone aquatic ecosystems and freshwater biodiversity, National Climate Change Adaptation Research Facility, Gold Coast, 51 pp.

Davis et al go on stating that ecological refugees:

> 'can vary across space and time depending on the dispersal abilities of their biota. The most important are the perennial waterbodies that support obligate aquatic organisms. They contain biota supported by contemporary demographic and genetic processes, i.e., demogenetic processes, sensu Frank et al. (2011). These species will persist where suitable habitats are available and dispersal pathways are maintained.'[49]

> '...Adaptation planning must protect hydrological and aerial connectivity of ecological refuges (especially perennial waters) at a whole of landscape scale. Local, site-scale management (including fencing and eradication of invasive species) is needed to ensure that good quality habitats, fulfilling a variety of refuge functions, are maintained across the arid zone.'

Recommendation 24: Accompanying the NWA is a mapping program of evolutionary refugia and ecological refuges

Recommendation 25: the NWA must state that ecological refuges and evolutionary refugia must be conserved and protected.

Recommendation 26: key threatening processes that pose significant risk to ecological refuges must be identified nationally.

Recommendation 27: Vulnerability assessments to determine the climate sensitivity and likely persistence of key habitats.

c. Hydrological processes

'Identifying and maintaining the key hydrological (groundwater and surface water) processes that support the persistence of arid zone aquatic ecosystems and the biodiversity they support is essential. The importance of beneficial floods to dryland rivers and groundwater resources to springs must be recognized.'[50]

Recommendation 28: NWA is accompanied with a national mapping program to identify key hydrological processes that support the surface water and groundwater dependent arid zone aquatic ecosystems.

d. Reducing risk by reducing existing stressors and key threatening processes

Reducing the risks to groundwater dependent vegetation and aquatic ecosystems in the arid zone is critical to increase the resistance and resilience of these sites.

This must include threats such as invasive species, including species like buffel grass, in addition to invasive fauna like camels, horses, donkeys and goats. Changed fire regimes must also be better understood to how they affect water sites across the arid zone.

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[49] Ibid, p.13.

[50] Davis, J, Sunnucks, P, Thompson, RM, Sim, L, Pavlova, A, Morán-Ordóñez, A, Brim Box, J, McBurnie, G, Pinder, A, Choy, S, McNeil D, Hughes, J, Sheldon, F & Timms, B 2013, p.17, Climate change adaptation guidelines for arid zone aquatic ecosystems and freshwater biodiversity, National Climate Change Adaptation Research Facility, Gold Coast, 51 pp.

A risk assessment can outline the key interventions that can occur to conserve these key habitats.

Recommendation 29: Risk assessment for aquatic ecosystems and groundwater dependent vegetation is developed across the arid zone, so as to understand the key threats.

e. Climate change and groundwater dependent ecosystems

Groundwater dependent ecosystems function as climate refugia. They are not recognised as a key asset that will buffer the impacts of climate change.

Recommendation 30: Identification and mapping of climate change refugia across statutory water plan areas.

Recommendation 31: NWA recognises that groundwater dependent ecosystems function as climate refugia.

f. Water mining

'The utilisation of non-renewable groundwater resources, whether on a planned or unplanned basis, implies the mining of storage reserves' (Karin Kemper, World Bank, in the introduction to Foster et al. 2006).[51] Note that 'the reduction of aquifer reserves (with or without side-effects) is essentially permanent' (p. 14). There are numerous studies on factors that lead to groundwater mining (e.g. Noyala-Medrano et al, 2009) and what the impacts of groundwater mining are.[52] These impacts include desertification and land subsidence (see, for example, Zektser et al., 2005).[53]

A new NWA must confront policy realities in the Northern Territory. The NTWAPF has jurisdiction outside of water plan areas and allows for 80% of an arid zone aquifer to depleted over a 100 year period. The policy applies to the 72% of licences in the Territory and 83% of its landmass. This policy's shortcomings has been used as a bartering chip to promote greater extraction within water plan areas and encourage water advisory committees to accept less than satisfactory water allocation plans on the basis that if this plan does not go ahead, then this policy has standing which will allow far greater volumes of water to be extracted. This type of policy as it applies to arid lands presumes aqua nullius.

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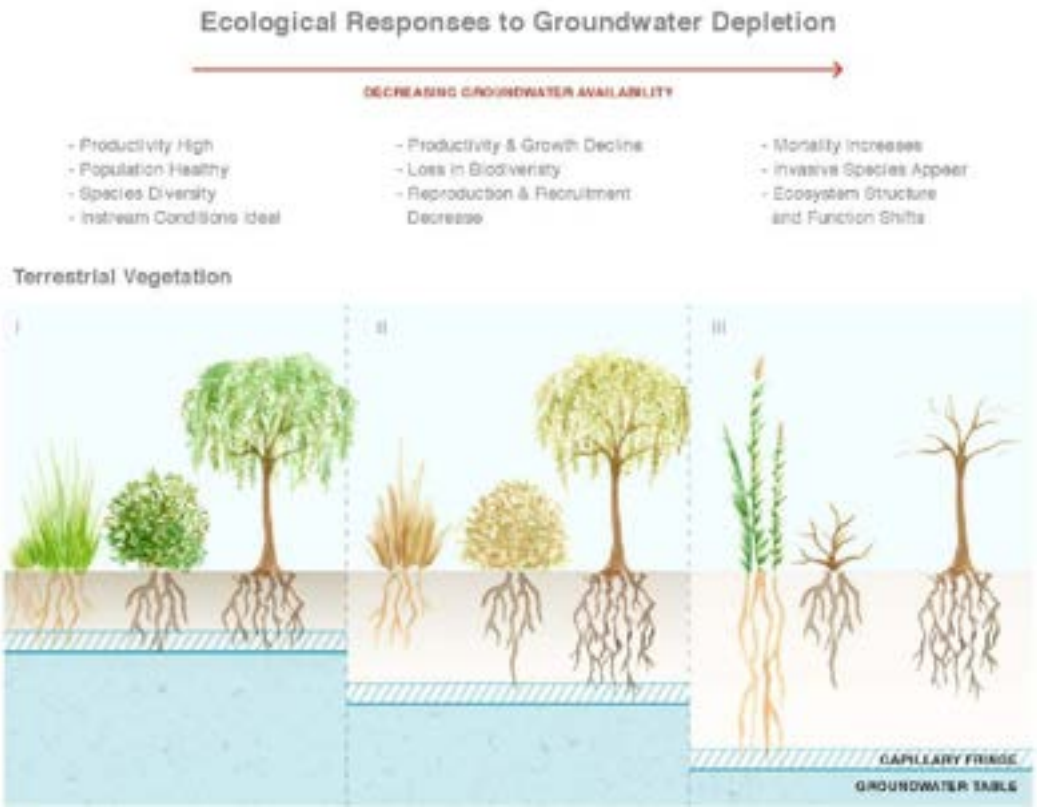
[51] Foster and Loucks, 2006, 'Non-renewable groundwater resources: A guidebook on socially-sustainable management for water policy makers', *UNESCO IHP-VI, Series on Groundwater No. 10 ('Foster et al').*

[52] Noyola-Medrano, M.C., Ramos-Leal, J.A., Domínguez-Mariani, E., Pineda-Martínez, L.F., Lopez-Loera, H. and Carbajal, N., 2009. Factors causing the mining of aquifers in arid environments: case of San Luis Potosí valley. *Revista mexicana de ciencias geológicas*, *26*(2), pp.395-410.

[53] Zektser et al, 2005. Environmental impacts of groundwater overdraft: selected case studies in the southwestern United States, *Environmental Geology*.



(Source: Rohde et al., 2017)

Recommendation 32: The NWA must make clear that policies like the NTWAPF are inappropriate, especially in relation to its treatment of arid zone aquifers and presumption of the acceptability of mining stored groundwater and will be non-compliant with a new national agreement.

7. Water markets

For over 150 years, aspirations to develop the north have dominated the political discourse of northern Australia. Ideas of nation-building, economic prosperity and national security drove development agendas to ensure that the 'untapped potential' of northern Australia had to be realised. It is in this colonial context that the continued efforts to develop, unbundle and marketise waters, particularly groundwaters, must be understood.

> 'The empty north is of immense strategic importance, and self-preservation demands that we devise means for introducing population into that vacant area. Such a policy, also, is vital to the maintenance of the great and basic principle of a White Australia . . .' (Bruce 1926 in).
>
> '. . . if only we could show the same sort of boldness, imagination and faith as was shown by the first men who walked cattle into central Australia from the south, we should be able to alter the whole face of northern and central Australia in a generation' (Hasluck 1961, p. 11).
>
> 'In 1863, the South Australian Government, acting for a population of only 140,000 persons, sought and obtained control over the vast region to the north of the colony, now known as the Northern Territory. Contemporaries believed this to be 'a new world', possessing valuable pasture lands and large rivers, the occupation of which 'would open out' to the stockholders a large and important markets for their surplus stock; it would open up to their sons a new field

> of labour and of enterprise; and it would open up to the agriculturalists a market for their produce.' Donavon, 1981 [54]
>
> "Closer settlement of the Northern Territory the turning of thousands of miles of now almost useless country into beef producing pastures, the creation of well watered agricultural areas in the inland. These things have long been the dreams of many Territorians" (Centralian Advocate, 1952).

NWR 2020 keeps these aspirations alive stating that '[d]evelopment of Northern Australia could see the future development of trading in that region.'[55]

Donavon articulates this point succinctly and further in his book titled 'a Land full of Possibilities: a history of South Australia's Northern Territory', stating

> '[i]n summary, it may be said that the belief that the region would be a profitable field of investment was based upon a misconception of the north Australian environment, its immediate economic potential, and the ability of the colonists to exploit it'.[56]

It is a reality that has dominated development discourses in the Northern Territory in the 113 years since South Australia gave up jurisdiction of the Northern Territory to the Commonwealth in 1911. Huge projects that are unviable are promoted, from prawn farms i.e. Operation Sea Dragon which fell over in 2023, to right now, with the largest groundwater licence in the country at Singleton Station.

a. Water trading

ALEC generally does not support commodification of the environment and water, especially in arid lands where water is vital, and place based, with a very small number of consumptive users accessing the same resource. Unbundled water, disconnected to land is deeply damaging in arid zone groundwater context.

However, even if we did, the focus of the NWI to introduce registers of water rights and standards for water accounting, expand trade in water rights, improve pricing for water storage and delivery are the last things that should happen, not the first.

As it is, we are finding the Territory Government creating conditions for risk and mismanagement without having the fundamentals in place, for example, comprehensive legislation to actually have the ability to manage the water resource safely and effectively.

We are also concerned that effectively water value is only the cost of management until a resource is fully allocated, which in turn creates conditions that lead to the grossly uneven distribution of benefits linked to water trading and its commodification. As is articulated by Waldman et al (2023) in 'the water trade is booming - and sucking Australia dry'

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[54] Donovan, P.F, 1981, p.xx, *A Land Full of Possibilities: A History of South Australia's Northern Territory*. New York: University of Queensland Press.
[55] Productivity Commission, 2021, p.89. 'National Water Reform 2020'.
[56] Donovan, P.F, 1981, p.xxi, *A Land Full of Possibilities: A History of South Australia's Northern Territory*. New York: University of Queensland Press.

> ‘Yet Australia’s experience turning a public good into a tradeable commodity has had far-reaching consequences, some that are only now being felt as the market matures. It provides a cautionary tale for other places considering solutions to water scarcity on a warming planet. Trading water, Australians have discovered, is tantamount to transferring wealth. The results are painful for communities, many of them Indigenous, that have seen their water disappear, farm economies gutted and environments depleted.’[57]

Recommendation 33: Groundwater trading does not expand across the arid zone

a. Water pricing

In arid areas, especially in pastoral areas drawing upon localised aquifers, stock and domestic use is frequently in competition with water dependent ecosystems and cultural sites. There is therefore a significant management cost associated with defining these water resources and they should be licensed. ALEC is concerned that stock bores are able to be installed without any consideration to these values. We note the business model for cattle stations is essentially to increase the number of water points. Pastoral stations are gaining a capital improvement by installing more stock bores[58]

Must include stock and domestic uses.

Must ensure that stock and domestic use is metered.

Recommendation 34: NWA is explicit that stock and domestic must also pay for their water in accordance with all other industrial users of water.

[57] Waldman, P, Rangaranjan, S, Whitley, A, Gross, S, 2023, ‘the Wate Trade is booming - and sucking Australia Dry’. Bloomberg.

[58] https://ntindependent.com.au/gina-rinehart-concludes-the-sale-of-nt-cattle-stations-to-hughes-pastoral-co/

8. Community engagement

Community engagement around water is a fundamental principle of effective water resource management. ALEC agrees that the NWI must be updated in improving community engagement processes.

Community engagement processes in the Northern Territory are atrocious. Georgine Wiso Water Allocation Plan did not even have a water advisory committee, the Ti Tree Western Davenport Water Advisory Committee is repeatedly ignored and have explicitly not endorsed the Draft WDWAP. When it does engage water advisory committees it is fraught as outlined in case study. Outside of water plan water advisory committees, the Department does very little to engage the public on water issues.
See case studies 7 on the Ti Tree Western Davenport Water Advisory Committee, and Case Study 8: GuidelineThe Guideline: Limits of acceptable change to groundwater dependent vegetation in the Western Davenport Water Control District (GDV Guideline) as further evidence of the deeply sub-par processes behind community engagement in the Northern Territory.

We see the Department use deceptive and disingenuous tactics like the Georgina Wiso Water Allocation Plan where no consultation occurred outside of a ‘Have Your Say’ submission process.

This has also been highlighted by Case Study 9: Water Justice Project and Ali Curung Community Statement.

For example look at this image that is used to justify the estimated sustainable yield.

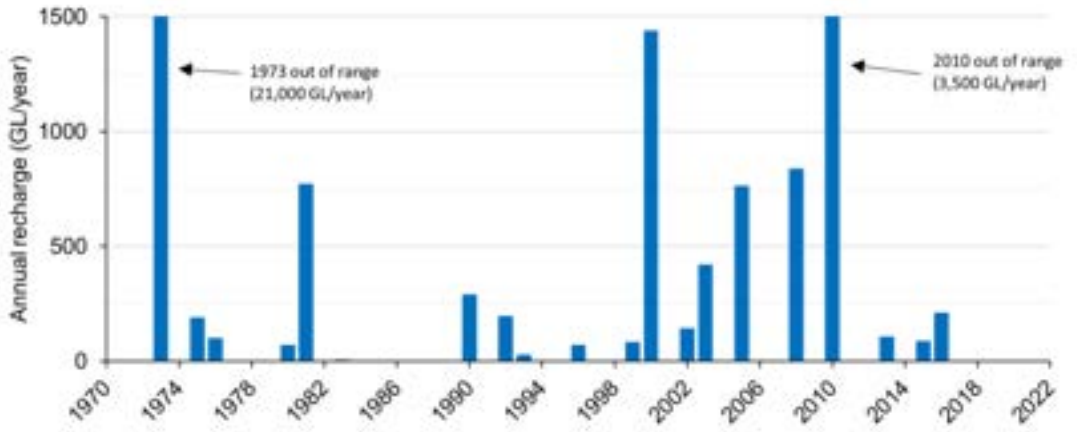


Figure 5 Modelled recharge to the CLA in the Georgina Basin

To account for their optimal rate of extraction they have assumed that a Cyclone Tracey event and 21000GL of recharge will happen once every 50 years. To make this look less farcical, they have reduced the scale of the graph to between 0-1500GL, even though the cyclone Tracey event dwarfs all other recharge in the region. This approach is not working and continues to undermine trust in water resource management.

A new NWA must significantly strengthen standards around community consultation for water resources. Currently, community engagement falls well below the International Association for Public Participation code of ethics.

Consultation does not meet the code of ethics of the International Association for Public Participation (IAPP)

Principle	Position of IAPP	Draft Western Davenport Water Plan
Openness	We will encourage the disclosure of all information relevant to the public's understanding and evaluation of a decision.	• The information provided is scant in detail. • The water requirements and impacts on dependent values are not described. • Reports are cited which are in draft form, or still in preparation and not publicly available[59].
Access to the process	We will ensure that stakeholders have fair and equal access to the public participation process and the opportunity to influence decisions.	• The plan was announced on a Friday afternoon, six weeks prior to Christmas. • The department does not appear to have actively enabled public engagement during draft development, or during consultation on the draft. It is clear that most people in the plan area are unaware of the plan's existence. • Information is not presented in a range of formats suitable for engagement with all stakeholders.
Respect for communities	We will avoid strategies that risk polarising community interests or that appear to "divide and conquer."	• Failure to establish a water advisory committee, which could help produce a consensus. • The large ESY, which we argue is not supported by evidence, is highly divisive • Announcing the plan on the ABC Country Hour appears to be aimed currying support for the plan from the audience most likely to be favourably disposed to large allocations for consumptive use and influence.
Advocacy	We will advocate for the public participation process and will not advocate for interest, party, or project outcome.	• It is concerning that the Department of Environment, Parks and Water Security reports under a separate program that it is pursuing development opportunities for irrigated agriculture. Refer section 6.5.1 of the technical report. It states a notional estimate of 170,000 ML/year is needed to within the life of the plan. The Department's impartiality appears compromised by identifying areas as suitable for land activities which need very large amounts of groundwater.

Recommendation 35: NWA establishes community engagement standards that are based on the International Association of Public Participation.

[59] Maggu, J., Waugh, P. and Schult, J. (2022, in progress). *Water resources of the Wiso Basin Water Allocation Plan area, Technical Report 6/2022.* Department of Environment, Parks and Water Security (Water Resources Division). Northern Territory Government. Palmerston, Northern Territory.
Maggu, J., Waugh, P., Smith, I. and Schult, J. (2022). *Water resources of the Georgina Basin Water Allocation Plan area, Technical Report 10/2022.* Department of Environment, Parks and Water Security (Water Resources Division). Northern Territory Government. Palmerston, Northern Territory.

9. Appendix: Case Studies

Case Study 1: Georgina Wiso Water Allocation Plan

The Georgina Wiso Water Allocation Plan 2023-2031 (GWWAP) was declared on the 10 November 2023. It proposes to allocate 210GL of water across a 155,000 km2 area, extending about 600 km from north to south, and 500 km east to west.

The plan is not compliant with the NWI and is fundamentally flawed

No Water Advisory Committee was created and no consultation occurred:

Schedule B(i) makes clear that water plans are to be 'developed in consultation with all relevant stakeholders'. Schedule E also states that 'water planning processes include consultation with stakeholders including those within or downstream of the plan area'.

There was no WAC for this plan. No consultation occurred outside of an online 'Have Your Say' submission process.

The GWWAP is not a statutory water plan due to three part structure:

The Georgina Wiso Water Allocation Plan adopts a new plan template breaking the plan into three documents:

- Georgina Wiso Water Allocation Plan 2022-2030 (Statutory WAP);
- Georgina Wiso 2022-2030 Background Report (Report);
- Georgina Wiso 2022-2030 Implementation Actions (Actions).

The structural problem is that Water Act 1992 only applies to the Statutory WAP, which will be the only plan which is to be gazetted. Cynically, the statutory WAP has been gutted of any meaningful content that gives assurance or guidance as to how water is to be taken safely. The Controller of Water Resources in making water

licensing decisions does not need to consider the Report or Actions, and these may be varied. This is done by drastically minimising the content within the Statutory WAP

The three part structure of the GWWAP is not compliant with the NWI.

Monitoring and reporting requirements are not part of the 'statutory WAP'

Schedule E 1(x) states that 'conditions to which entitlements and approvals having effect within the area covered by the plan are to be subject, **including monitoring and reporting requirements**, minimising impacts on third parties and the environment, and complying with site-use conditions' [emphasis added].[60]

Paragraph 40(i)states that 'parties will monitor the performance of water plan objectives, outcomes and water management arrangement' and Paragraph 40(iii) states that states and territories will 'provide regular public reports to help water users and government manage risk, with timely indications of possible chang. The reporting will be designed to help water users and governments to manage risk, and be timed to give early indications of possible changes to the consumptive pool'.[61]

The monitoring plan and reporting requirements are all part of the Implementation Actions. The Implementation Action is not a statutory document and has no effect. Therefore it is not compliant with the NWI.

Adaptive management and risk assessment not part of the 'statutory WAP':

Paragraph 25(iv) states that an outcome of water access entitlements and planning frameworks is to 'provide for adaptive management of surface and groundwater systems in order to meet productive, environment and other public benefit outcomes'.[62] The adaptive management plan is part of the Implementation Actions and is not part of the statutory WAP, therefore it is not compliant with the NWI.

Paragraph 46-51 of the NWI outlines that state and territory jurisdiction must assign risks for changes in allocations. The risk assessment is part of the Implementation Actions and is not part of the statutory WAP, therefore it is not compliant with the NWI.

No guidance for management

The plan is extremely light on detail and provides no guidance for management. The management zones are extraordinarily large. It appears the NTG is indifferent as to where water within the largest WAP volume in Northern Territory history is taken across a 600 km stretch of land. The Plan also removes any limits whatsoever as to the circumstances across this 155,000 km 2 area under which groundwater can be taken. It is creating a situation where an application for a 50GL or 100GL water licence for irrigated cotton will be lodged.

As the plan gives no guidance on where and how water can be taken, it cannot meaningfully predict the consequences of taking this amount of water on receiving environments. This again is a fundamental flaw of this regime, which seeks to deal with all risk and uncertainty at the licencing level. A catchment-based management approach would be a vast improvement on this failed approach.

No 'inclusion of Indigenous representation':
Paragraph 52(i) states that 'inclusion of indigenous representation in water planning wherever possible'. ALEC understands that there was no attempt to consult indigenous stakeholders.

[60] National Water Initiative, p.35.
[61] National Water Initiative, p.7-8
[62] National Water Initiative, p.5.

Case Study 2. Objectives in the Territory water plans

Table 1. Objectives in Draft WDWAP and GWWAP. Comparison between objectives for environment and culture with rural stock and domestic.

	Draft Western Davenport Water Allocation Plan 2023-2033 (March 2023)	**Georgina Wiso Water Allocation Plan (December 2023)**
Environmental objective	**Balancing** the retention and preservation of key environmental values dependent on water with the overall benefits provided by the water resources' The associated outcomes are: a. 'There is an **improved understanding** of the groundwater and surface water resources characteristics and environmental values. b. The condition of groundwater dependent ecosystems **is known and monitored as far as practicable**, and appropriately **accounted for** in water planning and licensing. c. **People are confident** that key environmental values are appropriately **accounted for** in water planning and licensing.	Balancing the retention and preservation of key environmental values dependent on water with the overall benefits provided by the water resources The associated outcomes are: a. There is an **improved understanding** of the characteristics and environmental values of the groundwater and surface water resources b. the condition of groundwater dependent ecosystems **is monitored as far as practicable** and appropriately **accounted for** in water planning and licensing c. key environmental values are appropriately **accounted for** in water planning and licensing.
Cultural value objective	Ensure water licence decisions **consider** Aboriginal and other cultural values dependent on water The associated outcomes are: a. There is an **improved understanding** of regional Aboriginal cultural values. b. Key Aboriginal cultural sites that rely on water are monitored and potential impacts on such sites are appropriately **accounted for** in water planning and licensing. c. Other cultural values that rely on water are monitored and potential impacts on such values are appropriately **accounted for** in water planning and licensing. d. People understand how Aboriginal and other cultural values are identified and maintained.	Ensure water licence decisions **account for** Aboriginal and other cultural values dependent on water The Associated outcomes are: a. there is an **improved understanding** of Aboriginal cultural values and other cultural values associated with the water resource b. key Aboriginal cultural sites that rely on water are monitored and potential impacts on such sites are appropriately **accounted for** in water planning and licensing c. other cultural values that rely on water are monitored and potential impacts on such values are appropriately **accounted for** in water planning and licensing
Rural stock and domestic objective	**Predict and protect** water for rural stock and domestic purposes The associated outcomes are: a. The amount of water needed to support stock and domestic use is further refined. b. The quality of water sourced for stock and domestic purposes **is maintained**. c. Community members and relevant stakeholders understand water management arrangements.	**Predict and protect** water for rural stock and domestic purposes The Associated outcomes are: a. **the amount of water** needed to support stock and domestic use **is met** b. **the quality of water** sourced for stock and domestic purposes **is maintained** c. community members and relevant stakeholders understand water management.

Case Study 3: Singleton Station groundwater licence

This case study outlines the extent of impacts proposed at Singleton Station.

Within the Western Davenport Water Control District lies Singleton Station - 380kms north of Mparntwe Alice Springs. It is the site of Australia's largest groundwater licence, granted in November 2021 by the Northern Territory Government. 30km to the development's east, lies Ali Curung, a remote community of 400 people.

Singleton proposes 3,300ha of irrigated horticulture, which will:

- Use up to 40 billion litres of groundwater a year,
- Use up to a trillion litres of groundwater over 30 years, twice all the water in Sydney Harbour;
- Receive all of its water for free
- Lower the groundwater table by up to 50 metres and by at least 5 metres across a 50km stretch of the shallow groundwater landscape, damaging and destroying groundwater dependent trees, soaks, springs and swamps.
- threaten up to 40 sacred sites;[63]
- Bring up to 40,000 tonnes of salts to the surface every year, affecting 'the long-term viability of irrigated agriculture';[64] and,
- Only provide 5-8 full-time jobs to the local Aboriginal communities.[65]

[63] Donaldson S (2021) 'Singleton Water Licence Aboriginal Cultural Values Assesssment: Public Report to the Central Land Council', Environmental & Cultural Services. Accessed 25 November 2023.
[64] Cook P, Keane R (2021) 'The Risk of Salinity due to Irrigation Developments in the Western Davenport Basin, Northern Territory'. The National Centre for Groundwater Research and Training. Available at: https://hdl.handle.net/10070/858823. Accessed 1 December 2023.
[65] Connor J, Hill D, Gregg D, Sanghu K (2022) 'Review of the Singleton Horticultural Project's water entitlement provision costs, benefits and employment impacts' University of South Australia, Centre for Markets, Values and Inclusion, Accessed 25 November 2023.

Case study 4: Water Allocation Planning Framework

The Northern Territory Water Allocation Planning Framework (NTWAPF) clearly demonstrates how rudimentary and far behind water planning is in the Northern Territory.

The NTWAPF is outdated, not fit for purpose and has no scientific basis. The non-statutory document hasn't been updated since its creation in 2000. It is only two pages, yet it provides thresholds for extraction in the Top-End and Arid Zone. The WAPF applies to areas not covered by WAPs - this amounts to 72% of licences in the Northern Territory.[66]

It states that in the arid zone for groundwater 'total extraction over a period at least 100 years will not exceed 80% of the total aquifer storage at the start of extraction'[67]. This threshold is not supported by any scientific basis and constitutes water mining.

It is important to note that unlike the most contemporary water plans in the Territory, the NTWAPF does state that 'there will be no deleterious change in groundwater discharges to dependent ecosystems'.


Policy

Northern Territory Water Allocation Planning Framework

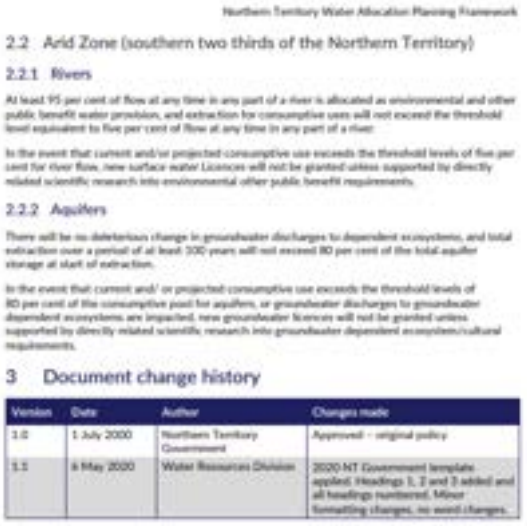
1 Policy

2 Contingent allocation rules

2.1 Top End (northern one third of the Northern Territory)

2.1.1 Rivers

2.1.2 Aquifers


Northern Territory Water Allocation Planning Framework

2.2 Arid Zone (southern two thirds of the Northern Territory)

2.2.1 Rivers

2.2.2 Aquifers

3 Document change history

Version	Date	Author	Changes made
1.0	1 July 2000	Northern Territory Government	Approved – original policy
1.1	6 May 2020	Water Resources Division	2020 NT Government template applied. Headings 1, 2 and 3 added and all headings numbered. Minor formatting changes, no word changes.

The statement 'There will be no deleterious change in groundwater discharges to dependent ecosystems, and total extraction over a period of at least 100 years will not exceed 80 per cent of the total aquifer storage at start of extraction', which allows widespread water mining, is outrageous.

[66] Environmental Defenders Office. 2021, p.1. 'Deficiencies in the existing water law and governance framework in the Northern Territory'.

[67] **Department of Environment, Parks and Water Security, 2020,p.2.** 'Northern Territory Water Allocation Planning Framework'. Northern Territory Government.

i. It misconstrues the NWI's very narrow guidance for what constitutes "non-renewable resources" as applying to all groundwater resources in the arid zone. The NWI policy guidelines state:

> *"Non-renewable groundwater systems are those where recharge is significantly lower than that in the geological (historical) past or where groundwater aquifers have been cut off from recharge by geological events and have not been recharged for thousands, if not millions, of years."*

UNESCO (Foster 2006: p11) specifies annual rainfall less than 300mm as often a criterion for an aquifer to be considered non-renewable. This seems appropriate and this and the other criteria mentioned in this report should apply *https://unesdoc.unesco.org/ark:/48223/pf0000146997*

We believe the descriptions of non-renewable resources in the above documents exclude most aquifers in the arid zone.

ii. Allows water resources to be permanently lost to water mining without a water allocation plan, in contradiction with the National Water Initiative expectation of *clear identification of the environmental, cultural and other public benefit outcomes to be met through planning processes*.

iii. Reflects a colonial (*aqua nullius*) attitude toward arid zone water resources by assuming water resources are more or less available for mining. Our water resources are an essential part of an already finely tuned and delicate landscape, which is reeling under the weight of climate change and pastoral activity. The starting assumption should be that water resources are always needed and precious, not that they are there for exploitation.

We believe that the exceptional case of mining the largely non-renewable Mereenie aquifer near Alice Springs for high value public drinking water supply, with relatively few known environmental consequences, under a water allocation plan is being used as a trojan horse to allow mining of renewable groundwater resources for horticulture on an industrial scale at great cost to the environment. It makes a mockery of over 60 000 years of sustainable management by Aboriginal people!

Case Study 5: Climate change considerations in NT Water Plans

Western Davenport Water Allocation Plan 2021-22

'There is no industry standard for projecting future climate patterns and for the purpose of this WDWAP, the past 100 years has been assumed to represent the next 100 years…Therefore, the effect of climate change is not considered in this WDWAP.'[68] [emphasis added]

Ti-Tree Water Allocation Plan 2020-2030

'Estimated sustainable yield and allocations to beneficial uses have been determined based on historic climatic data only and do not consider the possible effect of climate change on the long-term availability of water.'[69] [emphasis added]

Alice Springs Water Allocation Plan 2016-2026

'Allocation and licence limits in the plan have been determined based on historic climatic data and do not consider the possible effect of climate change on the long term availability of water from this water source.'[70] [emphasis added]

Draft Western Davenport 2023-2033 Background Report

'Therefore, climate data used in the modelling for the district has not been altered or adjusted to fit variable climate change scenarios.'[71] [Emphasis added]

Georgina Wiso Background Report 2023-2031

'Relying on actual stored water is a more precautionary approach as it does not rely on highly variable recharge or uncertainties about climate change'[72]

[68] P.40.
[69] p.9.
[70] p.56.
[71] P.16
[72] p.25

Cast Study 6: Draft Western Davenport Water Allocation Plan 2023-2033 and impacts on groundwater dependent trees

The Draft Western Davenport Water Allocation Plan was publicly released in early 2023. A Final WDWAP is expected to be declared in the second quarter of 2024.

If the Draft Water Plan goes according to plan, then the groundwater table will be affected at a landscape scale. After 50 years, over a 100km of the groundwater table will be lowered by at least 5 metres, and across a 40 km stretch a 20 metre drop in the groundwater table will occur.

This plan promotes significant water mining which will devastate groundwater dependent trees across the region. This water plan will accelerate the desertification of the arid zone.

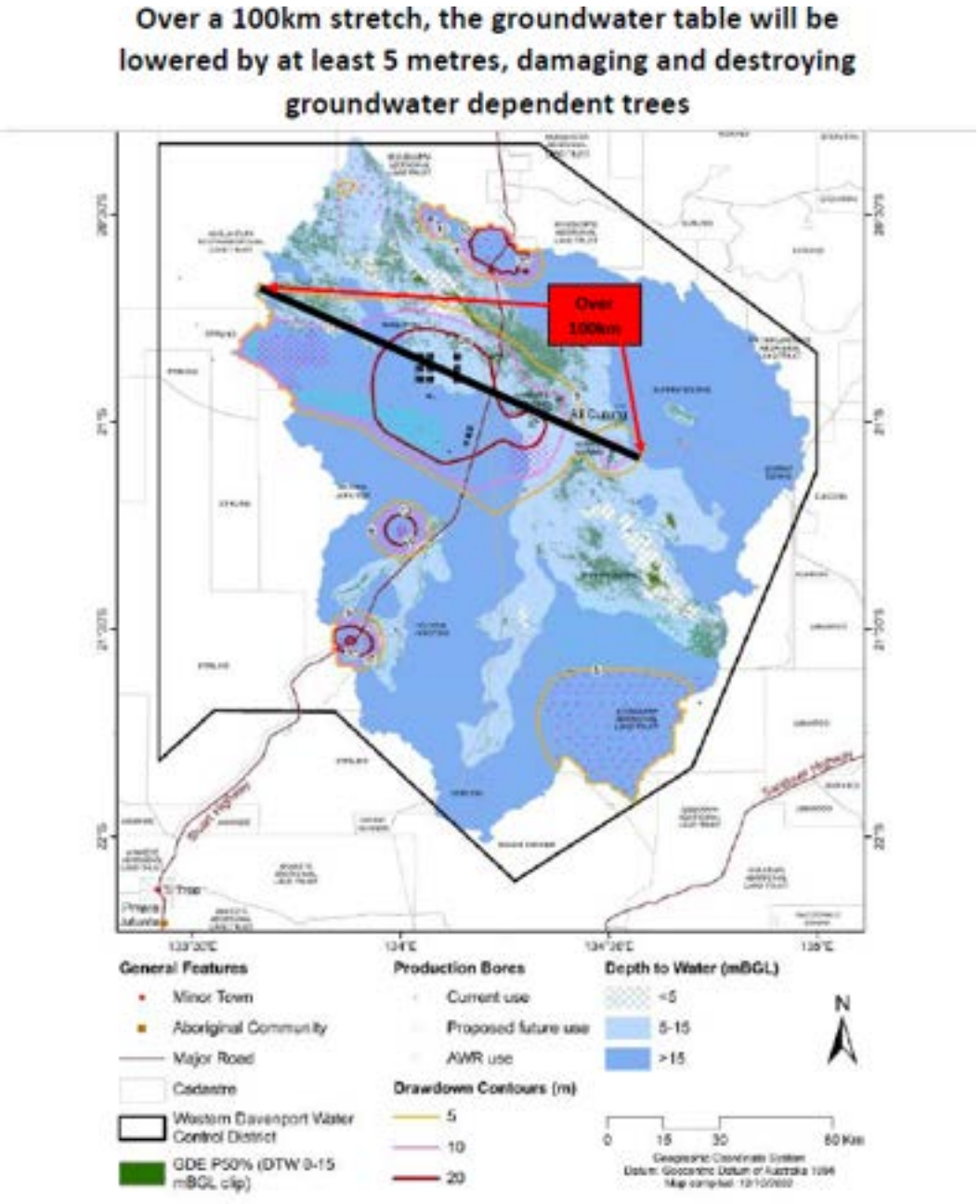


Figure 19 Groundwater extraction of 87,700 ML/year after 50 years continuous pumping (note: depth to

Case study 7: The Guideline: Limits of acceptable change to groundwater dependent vegetation in the Western Davenport Water Control District (GDV Guideline)

The GDV Guideline promotes a 30 percent destruction rate of groundwater dependent vegetation within the Western Davenport Water Control District. These groundwater dependent trees are the largest, most complex habitat in the region. They also act as climate refugia, where the permanent source of shallow groundwater below the surface has transformed these semi-arid environments into oases of the desert.

Through Freedom of Information it is known that the development of the Guideline and its 30% rule:

a. was largely developed in 1 week in February 2020 where no draft was produced.
b. was based on a quick google scholar search;
c. Has no scientific basis, where the development of the document relies on land clearing guidelines for the Daly region in the Top-End savanna and land retention thresholds in southeastern Australia.[737475] None of these studies have any relevance to semi arid environments and groundwater dependent ecosystems.
d. Was deliberately not put to the WAC for consideration by the Department, despite this group developing the previous water allocation plan;
e. Was only scrutinised by one stakeholder, which was the industry representative (Fortune Agribusiness) who would benefit from the development of the GDE Guideline;
f. There was no other engagement or public consultation about the development of the Guideline;
g. When formally finalised by the Department, it was sent to Fortune Agribusiness the day the GDE Guideline was signed off by the Department CEO. This was five months before the GDE Guideline was made publicly available on the Department's website.

Further, there was no attempt to communicate its potential impacts to groundwater dependent vegetation and the semi-arid zone. This is significant as the GDE Guideline goes against public expectations that groundwater dependent ecosystems are protected.

As Eamus et al., (2006) state, in determining what are the safe limits to change in the groundwater regime 'implicit to this, of course, is that acceptable change has been defined by stakeholders (e.g. managers, the public, scientists and landowners)'.[76]

This top-down approach to water resource management which actively excludes the public and key stakeholders lacks transparency. No opportunity was provided for engagement and scrutiny. This approach fuels a tense water resource management environment and undermines the wider public's confidence that the Northern Territory Government is making decisions that are in the public interest. It is poor policy which has no scientific basis. It is investor-led policy development which continues to erode trust in the Territory's ability to manage water resources.

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[73] Smith, F.P., Prober, S.M., House, A.P. and McIntyre, S., 2013. Maximizing retention of native biodiversity in Australian agricultural landscapes—The 10: 20: 40: 30 guidelines. *Agriculture, ecosystems & environment*, *166*, pp.35-45.
[74] Adams, V.M. and Pressey, R.L., 2014. Uncertainties around the implementation of a clearing-control policy in a unique catchment in Northern Australia: exploring equity issues and balancing competing objectives. *PLoS One*, *9*(5), p.e96479.
[75] McAlpine, C.A., Fensham, R.J. and Temple-Smith, D.E., 2002. Biodiversity conservation and vegetation clearing in Queensland: principles and thresholds. *The Rangeland Journal*, *24*(1), pp.36-55.
[76] p.105

Case Study 8: Water Justice Project and Ali Curung Community Statement

The Water Justice Project is a community-led storytelling project saying no to the Singleton Station water licence. It is a collaboration between the Running Water Community Press, Arlpwe Art and Culture Centre in Ali Curung and the Arid Lands Environment Centre.

The First Release of the video storytelling project can be viewed here, a six minute video titled 'it's from the beginning'.

Through this project a community statement was also developed.

Ali Curung Community Statement

We are saying no to the removal of our water. The Northern Territory government is using forceful and deceptive tactics to give Fortune Agribusiness our water. We don't want to give out the water. It belongs to the land. It is the most precious resource in the world that they are trying to take away from us. We don't want that.

We need to stop the Singleton Station Water License. We need to stop the Northern Territory government from granting the water license to Fortune Agribusiness. Leave this water alone, it is from the beginning. It is from the creation time.

We don't want money, we just want to protect this water for everybody. We all live in the Northern Territory. Water is scarce in the desert. We really need water for the future Generations.

The water licence will have a big impact on the land. If the water level drops, it will soon produce salinity. It will be bad for the health of the people. Water is life and our lives matter.

We don't want to suffer. We don't want to buy water from the shop. We can dig it on our own, get water from the waterholes or dig it from the soakages. We know where the soakages are. We are going to keep our water and our soakages for our children.

This water licence will cause the biggest damage the Northern Territory government will ever create and there will be no way to fix it. Once water is gone, it is gone. It will be us mob who are going to suffer in the end, us mob who are really living on this land.

All Aboriginal people need to speak up against the Northern Territory government for taking our land and giving it to strangers from overseas. We must safeguard this water for our lives and our children and our wildlife. Leave the water for Indigenous people.

We are saying no. If you destroy this land, it is just like you are ripping a page out of a story book and the story is not there to tell for the future generations. We need water for us and for our animals, for turkey, emu, kangaroo, cats. Don't leave us with no Water.

We will fight to keep our water. It is for the lives of everybody who lives here in Ali Curung. That's our strong message to the government. Do not to take this water from us. We need it. We want the Federal Government to step in and work with us to protect our water. We are all saying no to Singleton Station Water License.

Developed by Senior Elders and community members of Ali Curung

Graham Beasley
Peter Corbett
Richard Jangala Holmes
Ned Jungarrayi Kelly
Alison Nampijinpa Downs

Maureen Nampijinpa O'Keefe
Valerie Nelson Nakamarra
Zeza Nampijinpa Noreen Egan
Julie Nangala Wauchope
Jennifer Nelson Nakamarra
Daphne Napanangka Dickensen
Arana Nangala Rice
Elizabeth Brown

Case Study 9: Ti Tree Western Davenport Water Advisory Committee

The Ti Tree Western Davenport Water Advisory Committee did not endorse the plan

This plan was not endorsed by the Western Davenport and Ti Tree Water Advisory Committee (WAC). The WAC has been explicit in their opposition to the plan in all its published minutes. The WAC has diverse membership representing Aboriginal, horticultural, environmental, remote community water supply, independent scientists and community interests and included, NT Farmers representative, the Central Land Council and ALEC. This may be the first WAC in NT history to explicitly not endorse a water plan.

Shockingly, the DEPWS consultation on this plan fails to mention that the entire WAC did not endorse the plan. This is despite the October minutes and leaked documents outlining the WACs opposition.

The Draft WDWAP is anti-democratic

The gutting of the Draft Water Plan has a sinister and anti-democratic objective. The Northern Territory Government has been explicit that the new structure that guts the water plan has been developed to 'prevent future opportunity for litigation'.[77]

This was publicly published in the Western Davenport and Ti Tree Water Advisory Committee meeting minutes on 3 October 2022. As outlined above, most of the important and key information has been taken out from the statutory WAP. This removes key safeguards which allow for water licence decisions to be legally challenged. If this plan is declared, it will be extremely difficult to challenge water licence decisions in the NT Supreme Court

Preventing decisions made by the Government from being challenged in the courts is anti-democratic and undermines a key pillar of our Westminster system of government.

Traditional Owners and custodians do not support the plan

ALEC understands that Traditional Owners, custodians and representative institutions do not support the Draft Water Plan.

The lack of consultation and engagement with the public

The Northern Territory Government did not attempt to consult or engage with the public about the Draft Water Plan beyond through the 'Have Your Say' portal. Further, ALEC is disappointed with the Have Your Say Survey which asks largely irrelevant questions that obfuscate from the catastrophic nature of the Draft Water Plan documents.

Kind Regards,

Adrian Tomlinson

CEO

Alex Vaughan

Policy Officer

[77] p.6.