Environmental Defenders Office

Submission to the Productivity Commission on the National Water Reform Inquiry

21 August 2020

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EDO is a community legal centre specialising in public interest environmental law. We help people who want to protect the environment through law. Our reputation is built on:

Successful environmental outcomes using the law. With over 30 years' experience in environmental law, EDO has a proven track record in achieving positive environmental outcomes for the community.

Broad environmental expertise. EDO is the acknowledged expert when it comes to the law and how it applies to the environment. We help the community to solve environmental issues by providing legal and scientific advice, community legal education and proposals for better laws.

Independent and accessible services. As a non-government and not-for-profit legal centre, our services are provided without fear or favour. Anyone can contact us to get free initial legal advice about an environmental problem, with many of our services targeted at rural and regional communities.

Environmental Defenders Office is a legal centre dedicated to protecting the environment.

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The Environmental Defenders Office (**EDO**) is pleased to be a member of the Stakeholder Working Group for the National Water Reform Inquiry being undertaken by the Productivity Commission. We accordingly welcome the opportunity to provide high-level comments regarding water reform in Australia, and to make recommendations to inform the next iteration of the National Water Initiative (**NWI**).

Our comments are informed by our expertise as water and environmental lawyers advising a diverse range of clients including Aboriginal people, irrigators, floodplain graziers, conservation groups and community groups across all Australian jurisdictions. This expertise is bolstered by our experience litigating in relation to alleged and proven breaches of laws regulating or otherwise affecting the use and management of surface and groundwater resources.[1] As such, we not only have an applied understanding of the strengths and weaknesses of applicable legislation, but of the governance arrangements that are required to ensure that these laws are actually *enforceable*.

As the EDO values a collaborative approach to water governance, we have also sought input from a range of external stakeholders and colleagues including Aboriginal water experts, farmers, scientists and economists. Their comments have helped to improve our understanding of an inherently complex and often fraught area of law and policy, and have arguably strengthened the quality of our analysis and recommendations.

As noted above – and owing to the fact that this is an interim step in the Productivity Commission's Inquiry process – our submission is high-level. However, we look forward to providing a more fulsome response to the Commission's final, draft report which will be released later this year.

To that end, this submission addresses the following 10 areas:

1. Measurement, water accounting and auditing
2. Compliance and enforcement
3. Access to information
4. Sustainable levels of extraction
5. Climate change
6. Aboriginal water rights
7. Water markets
8. Groundwater
9. Collaborative governance
10. Water quality

[1] For example: *Fullerton Cove Residents Action Group Incorporated v Dart Energy Ltd (No 2*) [2013] NSWLEC 38; *Hunter Environment Lobby Inc v Minister for Planning* [2011] NSWLEC 221; *Australian Conservation Foundation Incorporated v Minister for the Environment* [2016] FCA 1042; *Buzzacott v Minister for Sustainability, Environment, Water, Population and Communities* [2013] FCAFC 111; *Inland Rivers Network Incorporated v Harris* [2019] NSWLEC 74.

1. Measurement, water accounting and auditing

Measurement

'We cannot plan and manage what we do not measure'.[2]

While the NWI does refer to water metering, it leaves room for significant discretion regarding its application (and implies that legislative exemptions are acceptable).[3] By way of contrast, it is now broadly recognised that in conditions of water scarcity, accurate[4] water measurement at both the user and catchment scales is a vital component of good water governance.

In the first instance, failure to accurately measure extractions at the user scale has a number of direct and indirect consequence. First, it makes it all but impossible to determine if individual extraction limits (as determined by licensing conditions and other associated rules) have been adhered to in all instances. Second and by way of corollary, in the absence of accurate metering data, regulators can and do struggle to enforce said licensing conditions (noting that the criminal burden of proof which underpins prosecutions imposes a particularly high evidentiary standard). Third, this is turn renders certain offence provisions in water legislation merely decorative (to the extent that they apply to unmeasured or inaccurately measured extractions). This is particularly troubling insofar as the parliaments that enacted said provisions arguably intended them to be *justiciable*, not ornamental; certainly the broader community expects this to be the case. Finally, failure to accurately measure water extractions undermines community confidence in the government agencies tasked with managing water and has a detrimental impact on the social licence of water users. This is unfortunate for a number of reasons, not least of all because it erodes trust between different interest groups and contributes to the sort of fractiousness that has (at times) typified "debate" in the Murray-Darling Basin (**MDB**) in particular.

Second of all, the reliability of hydrological models used to assess catchment-scale extractions and compliance with applicable limits in part depends on the accuracy of input data (including individual extraction data).[5] Catchments with low levels of metering (or other forms of reliable measurement) therefore yield poor input data, which in turn undermines the accuracy of modelled outcomes. As noted by Van Dijk et al,

> *Current and earlier model evaluations suggest that* ***important sources of internal model uncertainty include (in approximate order of decreasing importance): a lack of data on diversions****; uncertainties in river system loss modelling; the quality of high flow gauging; groundwater exchanges; ungauged losses to rivers, lakes, wetlands and breakout flows; simulation of river operations and diversions; simulation of low stream flows patterns;*

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[2] Food and Agriculture Organisation of the United Nations (**FAO**), *Water Accounting for Water Governance and Sustainable Development*, 2018, p. vi.

[3] NWI, cl. 87.

[4] For the purposes of this submission, defined as ± 5 percent, as per Australian Standard 4747. We note that this standard has been given legislative force adopted by the NSW Government. See *Water Management (General) Regulation 2018* (NSW), cl. 237; Schedule 8.

[5] S.A. Wheeler, E. Carmody, R.Q. Grafton, R.T. Kingsford, A. Zuo, The rebound effect on water extraction from subsidising irrigation infrastructure in Australia, *Resources, Conservation and Recycling*, Volume 159, 2020 (see Appendix A in particular).

simulation of inflows; and uncertainty in future diversion patterns due to socio-economic changes [our emphasis].[6]

This is concerning insofar as accurate water measurement varies greatly both across and within jurisdictions (as do legal requirements regarding metering and telemetry).[7] For example, approximately 20 percent of extractions across the MDB remain unmeasured,[8] with this figure rising to between 34 and almost 70 percent in the northern MDB.[9] Against this backdrop, it is perhaps unsurprising that the MDBA has rated confidence levels in compliance modelling for the northern MDB catchments as "low" or "very low".[10] Beyond the MDB, there is a dearth of accurate data regarding the extent to which water extractions are accurately measured (or measured at all), which is in-and-of-itself problematic. However, we understand (based on our work) that metering of water extractions in Western Australia and the Northern Territory is particularly low. This is troubling for a range of range of reasons, including persistent drought (underpinned by evidence of climate change) in Western Australia[11] and calls to intensify irrigation development in northern Australia.

Case study: Queensland MDB

Over two-thirds of diversions in the Queensland portion of the MDB are unmetered or otherwise unmeasured.[12] This leaves considerable scope for unauthorised diversions, particularly given the large volumes of unmeasured water that are taken from floodplains, low levels of telemetry and the widespread practise of self-reading meters.[13] While water accounting reports for each catchment in Queensland are not publicly available, Water Auditing Monitoring Reports, which continued to 2011-12 (detailing compliance by each Basin State with the Cap), indicate that diversion figures for Queensland are the least accurate of any Basin State.[14] While the Queensland

[6] Van Dijk AIJM, Kirby M, Paydar Z, Podger G, Mainuddin Md, Marvanek S and Peña Arancibia J (2008) *Uncertainty in river modelling across the Murray-Darling Basin. A report to the Australian Government from the CSIRO Murray-Darling Basin Sustainable Yields Project*, CSIRO Australia.

[7] We will include an analysis of legal requirements in each jurisdiction in our submission responding to the Productivity Commission's final, draft report.

[8] MDBA, S*ustainable Diversion Limit Reporting and Compliance Framework*, 2018, p. 34.

[9] MDBA, *The Murray–Darling Basin Water Compliance Review*, 2017, p. 20. We note that amendments to metering laws in NSW – if properly implemented – will favorably alter these statistics for this part of the northern MDB. However, no equivalent legal amendments have occurred in Queensland. Further, we note that significant questions remain regarding the accuracy of estimates of extractions derived from overland flows in the Queensland portion of the MDB. For example, analysis of the Water Accounting Methods Report for the Condamine-Balonne Water Resource Plan indicates that 398.07GL out of a total of 870.6GL of extractions are not measured. Second, few water allocations are measured with meters that comply with Australian Standard 4747 (0% of supplemented water allocations and 1% of unsupplemented water allocations). Third, estimation of overland flow-extractions is modelled, with this being partly based on survey data regarding the capacity of overland flow storages that is approximately 20 years old. While a moratorium was imposed on the construction of new storage works in the Condamine-Balonne in 2000, compliance cannot be assumed over the last two decades. See: Queensland Government, *Water Accounting Methods Report for the Condamine-Balonne Water Resource Plan*, 2019.

[10] Turner, G., Vanderbyl, T., Kumar, S., 2019. *Final Report of the Independent Panel's Review of the Sustainable Diversion Limit (SDL) Water Accounting Framework, report prepared for the MDBA*, June 2019, p. 14.

[11] CSIRO and Bureau of Meteorology, *State of the Climate 2018*, pp. 6,7.

[12] MDBA, *The Murray–Darling Basin Water Compliance Review*, 2017, p. 20.

[13] MDBA, *The Murray–Darling Basin Water Compliance Review*, 2017, pp. 85,

[14] MDBA, *Water Audit Monitoring Report 2011-12*, August 2016.

Government has announced plans to improve measurement of water diversions, it remains to be seen what percentage of extractions will be accurately measured and subject to telemetry, particularly given the large volumes of diversions attributable to floodplain harvesting. It also remains to be seen whether the government will meet its stated commitment to ensure all water entitlements in the Queensland MDB are accurately metered by 2025 (noting that not all legal extractions are linked to an entitlement). Further, the ability of floodplain earthworks to divert water is poorly identified and not measured. It is also unclear whether these proposed improvements will translate into enforcement of water laws and reductions in possible non-compliance.[15]

Water accounting and auditing

While the NWI does recognise the importance of water accounting,[16] this has not necessarily translated into accurate water accounts at the user, catchment and basin levels.

In the first instance, water account information for an individual water user indicates that – in NSW at least – the responsible agency cannot guarantee the accuracy of the accounting information for individual licences. Specifically, at the bottom of each statement the following disclaimer appears:

> *WaterNSW does not warrant the data is correct nor does it warrant that the data or the data capturing processes are free from error…*

A disclaimer of this nature, combined with underlying metering inaccuracies, could fatally undermine any attempt by the regulator to enforce individual extraction limits (that is, to prosecute an individual user for account exceedances). Again, this potentially renders relevant offence provisions in water legislation non-justiciable, which is deeply concerning (not least of all because it does not meet community expectations regarding the *enforceability* of water laws).

At the state and national levels (which account for water at basin and catchment scales), analysis in peer-reviewed literature has revealed deficiencies,[17] including in relation to return flows. However, the more pressing issue is arguably the ongoing failure to legislate and implement independent auditing of these accounts. Relevantly, auditing (using satellite technology and other methods)[18] could reveal inaccuracies in the quantitative analysis underpinning accounts, and be used to inform refinements (which could in turn improve our understanding of the water balance at the catchment and/or basin scale). Furthermore, the Food and Agriculture Organisation of the United Nations (**FAO**) sees auditing as an integral part of rigorous water accounting, noting that it can assist in the

[15] Taken from: S.A. Wheeler, E. Carmody, R.Q. Grafton, R.T. Kingsford, A. Zuo, The rebound effect on water extraction from subsidising irrigation infrastructure in Australia, *Resources, Conservation and Recycling*, Volume 159, 2020, Appendix A.

[16] NWI, cll. 82-85 inclusive.

[17] See for example: S.A. Wheeler, E. Carmody, R.Q. Grafton, R.T. Kingsford, A. Zuo, The rebound effect on water extraction from subsidising irrigation infrastructure in Australia, *Resources, Conservation and Recycling*, Volume 159, 2020,

[18] We note that the use of remote sensing technology to track water diversions for compliance purposes is being trialled and rolled out in NSW. We understand that this technology could also be adapted for auditing purposes. See for example: https://www.hydronet.com.au/water-technology-supports-an-exciting-crop-water-use-monitoring-by-remote-sensing-project-for-the-nsw-doi/ (accessed 20 August 2020).

development of new policies and practices or adaptation of existing policies and practices so that stakeholders can "take better account of imbalances in water supply and demand".[19]

The parlous state of numerous river systems and wetlands in the MDB, in particular the Darling/Barka River, has been well documented in numerous scientific reports.[20] It has been concluded that continued over-extraction has contributed to increasing periods of low and no-flows, and was a contributing factor in the 2019 fish kills in the Menindee Lakes and Lower Darling River.[21] It has been (quite reasonably, in our view) postulated that rigorous water accounting coupled with monthly water auditing may have helped to identify the elements that led to this decline;[22] certainly if this had been accompanied by appropriately adapted management frameworks it could have helped to prevent the Darling River below Bourke from experiencing persistent "very low flow conditions three years earlier than the river upstream."[23]

Recommendations for Section 1

The next iteration of the NWI should emphasise the need for:

- "No meter, no pump" laws and the use of telemetry (and where relevant, the use of remote sensing technology to measure diversions of overland flows).
- Legislated, independent auditing (by Geoscience Australia, for example) of water accounts using remote sensing and other technologies.
- Appropriate adaptive management strategies capable of responding to audit results.

2. Compliance and enforcement

The NWI says relatively little about compliance and enforcement at the individual and catchment-scales,[24] which is arguably out of step with community expectations.

This is particularly true insofar as compliance and enforcement – together with accurate water measurement, water accounting and auditing – form the basis of good water governance. Furthermore, and as demonstrated by commentary in the preceding section, these elements are inextricably linked (for example, enforcement of certain water laws is rendered difficult or even impossible in the absence of accurate metering data or accurate individual water accounts).

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[19] FAO, *Water accounting and auditing: a sourcebook (FAO Water Reports – 43), Revised edition,* November 2017, p. 10.

[20] See for example: Natural Resources Commission, *Review of the Water Sharing Plan for the Barwon-Darling Unregulated and Alluvial Water Sources 2012: Final report*, September 2019; Australian Academy of Science (2019). *Investigation of the causes of mass fish kills in the Menindee Region NSW over the summer of 2018–2019*; Vertessy et al, *Final report of the Independent Assessment of the 2018-19 fish deaths in the lower Darling*.

[21] Australian Academy of Science (2019*). Investigation of the causes of mass fish kills in the Menindee Region NSW over the summer of 2018–2019*; MDBA, *Ecological needs of low flows in the Barwon-Darling*. 2018.

[22] Grafton, Quentin and Williams, John, *The Urgent Need for a Comprehensive and Independent Water Audit of the Murray-Darling Basin* (Submission to the Murray-Darling Basin Commission of Inquiry Bill 2019), 2019, p. 3.

[23] Natural Resources Commission, *Review of the Water Sharing Plan for the Barwon-Darling Unregulated and Alluvial Water Sources 2012: Final report*, September 2019, p. 8. Referencing Sheldon, Fran, *Technical review of the water sharing plan for the Barwon-Darling unregulated and alluvial water sources 2012, advice to the Natural Resources Commission*, 2019.

[24] See for example NWI, cl. 89.

Compliance and enforcement issues in the MDB have gained considerable public attention since the Four Corners' episode Pumped aired on 24 July 2017. We would like to acknowledge that there has been significant legislative and institutional reform in NSW as a consequence of this expose, as reflected in amendments to metering laws and the establishment of the Natural Resources Access Regulator (**NRAR**). However, the NRAR's continued success will depend on ongoing funding, which has proven to be problematic in the past,[25] and proper implementation of new metering laws (which are to be rolled out over the next few years). Recent litigation has also exposed difficulties enforcing certain offence provisions in the absence of a "no meter, no pump" policy. As a consequence, the NRAR has recently reiterated its support for such a policy.[26]

Unfortunately, comparable progress has not been made in Queensland, as detailed in the case study below.

Case study: Queensland

A formal review of compliance and enforcement in the MDB, undertaken in 2017, found that Queensland had a particularly poor enforcement record; inadequate staff and funding for audits and compliance activities and poor reporting of monitoring and compliance. These issues were and are underpinned by poor water governance arrangements including a high level of unmetered extractions; widespread self-reading of meters;[27] and the use of unreliable methods to estimate diversions from overland flows.[28] These issues further intersect with issues around transparency, which are elaborated on in Section 3, below (Access to Information).

The commitments made by Queensland in the Compliance Compact entered into by Basin States and the Commonwealth unfortunately do little to assuage these concerns.[29] For example, s. 1, which concerns transparency does not provide for a publicly available register containing all allocation, licensing and works approvals.[30] In the absence of this information the community can have little faith in the Government's commitment to true transparency. Section 2, which concerns compliance and enforcement, does not include any tangible KPIs, only general statements about reviewing and improving upon existing systems.

Similarly, compliance and enforcement in Western Australia appears to be *prima facie* problematic. For example, we have been unable to find any publicly reported prosecutions brought by the state for alleged breaches of the *Rights in Water and Irrigation Act 1914* (WA).[31] In making this

[25] Matthews, Ken, *Independent Investigation into NSW Water Management and Compliance. NSW Government, Interim Report*, September 2017; Matthews, Ken, *Independent Investigation into NSW Water Management and Compliance. NSW Government, Final Report*, November 2017; NSW Ombudsman, *Investigation into Water Compliance and Enforcement 2007–17. A Special Report to the Parliament under Section 31 of the Ombudsman Act 1974*, 2017; NSW Ombudsman, Water: Compliance and Enforcement – *A Special Report to Parliament, Under Section 31 of the Ombudsman Act 1974*, 2018.

[26] NRAR Press Release ("Water Regulator Disappointed by Court Decision"), 3 August 2020.

[27] MDBA, *The Murray–Darling Basin Water Compliance Review*, 2017.

[28] See: S.A. Wheeler, E. Carmody, R.Q. Grafton, R.T. Kingsford, A. Zuo, The rebound effect on water extraction from subsidising irrigation infrastructure in Australia, *Resources, Conservation and Recycling*, Volume 159, 2020, Appendix A.

[29] Murray-Darling Basin Compliance Compact (An agreement between the Australian Government, New South Wales, Victoria, Queensland, South Australia, Australian Capital Territory), Schedule 4.

[30] We do note that some allocations in Queensland are on the public register (see for example *Water Act 2000* (Qld), s. 168).

[31] Relevant offence provisions include (but are not limited to): *Rights in Water and Irrigation Act 1914* (WA), ss. 5C, 22, 26A, 26B, 26E, 26F.

observation, we note that there is often a positive correlation between a robust compliance and enforcement culture (supported by adequate governance arrangements, such as accurate metering) and the number of prosecutions brought by the relevant agency. This trend is clearly evident in NSW, with the NRAR radically increasing compliance activity (including prosecutions) following its establishment in April 2018.[32]

Recommendations for Section 2

The next iteration of the NWI should emphasise the need for:

- Strong compliance and enforcement culture, including appropriately resourced, independent water regulators (modelled on the NRAR) underpinned by appropriate governance arrangements (as detailed in our recommendations for Section 1).

3. Access to information

The NWI says relatively little about access to information and transparency.[33] However, access to information and good water governance arguably go hand-in-hand. Indeed, a great deal of mistrust in governments and between stakeholders could be avoided if more information was made publicly available (and in an accessible format). A recent peer-reviewed article by staff from the Stockholm International Water Institute (**SIWI**) affirmed the strong connection between rigorous water governance and access to information:

> *For a multilevel governance structure to be effective it must be coherent and complimented by other governance attributes, such as effective and informed participation among the multiple decision-making centres and actors, for which transparent decision-making and access to information is needed.*[34]

Unfortunately, the EDO and our clients remain concerned that public access to certain water-related information is lacking or non-existent in some jurisdictions. In our experience, this includes but is not limited to: licensing and allocation details; the names of licence holders; applications and approvals for trades; and applications and approvals for other statutory permits (for pumps, or to construct a levee or on-farm dam, for example). Failure to supply this information in a readily accessible and meaningful format fuels distrust (which is anathema to collaborative water governance) and makes it difficult to scrutinise approvals and accordingly assess their lawfulness (which again calls into question the enforceability of relevant offence provisions).

The latter is particularly problematic as judicial review of allegedly unlawful administrative decisions can generally only occur within a limited, statutorily defined window (often between 30 days and 3 months). We can cite at least one example where, following extensive research and analysis, our office uncovered an unlawful dealing which has had significant downstream impacts on the

[32] We note that while the *Natural Resources Access Regulator Act 2017* (NSW) was assented to on 30 November 2017, the NRAR began operating in April 2018.
[33] We note that cl.89 of the NWI refers to reporting, but is limited to four areas.
[34] Alejandro Jiménez, Panchali Saikia, Ricard Giné, Pilar Avello, James Leten, Birgitta Liss Lymer, Kerry Schneider and Robin Ward, Unpacking Water Governance: A Framework for Practitioners, *Water,* 2020: 12, p. 11.

environment and other water users. However, the "discovery" was made over a year after the limitation period for judicial review had expired, thereby rendering null and void any possibility of legal redress. We have reason to believe that this was not an isolated case. Regardless, the underlying problem can only be addressed if all applications and approvals are published in centralised, easy to access registers, thereby facilitating third party scrutiny of the same. This would have the added benefit of increasing trust and reducing the ambient level of suspicion amongst certain sections of the community regarding water management processes and decisions.

Case study: Tasmania

While there is a network of water monitoring stations in Tasmania, they tend to focus on water levels/flow, and only a few water quality indicators. Data is not publicly accessible (or easy to access) and datasets can be incomplete. Significantly, there is no comprehensive, publicly available dataset showing the quantities of water allocated to users and to the environment in each catchment. This is manifestly incompatible with the 'Objectives' of the *Water Management Act 1999* (Tas) (**WM Act**), which include 'increase the community's understanding of aquatic ecosystems and the need to use and manage water in a sustainable and cost-efficient manner' and 'encourage community involvement in water resource management'.[35]

By way of further example, it is our understanding the Hydro Tasmania has a special water licence under the WM Act (for the non-consumptive use of hydro-electricity generation), and that it is able to transfer water under that allocation to consumptive uses. However, this information is not publicly available (that is, the licence is not publicly available), making it difficult to develop a clear understanding of the framework within which it is operating, and possible impacts. This is particularly concerning as these "transfer rights" appear to be allowed for in legislation.[36] However, it is unclear as to what limits there are on the ability of Hydro Tasmania to transfer that water. We further understand from the provisions of the WM Act that the transfer of water by Hydro Tasmania to consumptive use is not subject to usual WM Act approval processes,[37] or within the ambit of Water Management Plans (**WMPs**).[38] Allowing transfers outside of the usual WM Act framework means there is a very real possibility that they could have unintended economic, social and environmental impacts.

Case study: Queensland

Enforcement of water laws, including by third parties, is hampered by a lack of transparency with respect to allocations, licences and works approvals. For example, the publicly available data sets for allocations and licences comprise excel spreadsheets with administrative references which do not correspond to searchable title references (for entitlements that are unbundled from the land). To obtain information regarding overland flow licences (which are still bundled to the land), it is necessary to apply to the relevant local council, which is time consuming and to that extent impractical. In reality, this information should be publicly available on an easy to search register as

[35] *Water Management Act 1999* (Tas), ss. 6(e), (f).
[36] WMA, s. 121.
[37] Without access to the special licence(s) issued to Hydro Tasmania under the WM Act, it is difficult to understand the restrictions on its power to transfer water for consumptive uses – see section 121 (1) of the WM Act.
[38] See sections 108 and 112 of the WM Act which give primacy to special licences over WMPs.

is the case in NSW (noting, however, significant limitations in respect of the existing NSW Water Register).

Case study: all jurisdictions

Our offices have lodged hundreds of applications to access information under various FOI laws on behalf of our clients. We are therefore well positioned to comment on the various methods employed by agencies to avoid disclosure of materials that should otherwise be in the public domain, and more generally on the extent to which FOI laws are undermined by a failure to – in certain instances – dedicate sufficient resources to ensure that legitimate requests can be met.

We also note that agency staff are able to employ a range of techniques to delay and obstruct access to information, with the result that it may take years before an appeal is able to be dealt with by the relevant tribunal. By this time, it may be too late for the information to be used in a meaningful manner by our client – a fact that is in our view well known by those responsible for managing requests for information under various FOI laws.

Requests for information from water-related agencies are particularly challenging and are often typified by inexplicable delays and skeletal or poorly argued justifications for refusing access or only granting partial access to the documents sought. We can provide further, specific examples upon request.

Our concerns regarding access to information and transparency further extend to the following matters:

- Closed-tender purchases of water entitlements from five entities in the MDB in 2017 amounted to $182, 352, 078.[39] These purchases were not subject to public consultation and high-level details were only are only published after the contract had been finalised (relevantly, the reliability or class of entitlement was not made publicly available). We further note that more detailed information regarding these purchases only came to light after the Senate issued an Order for Production of Documents to the Department of Agriculture. Finally, there is no systematic reporting of the strategic, environmental and social value of these entitlements, and how they advance the objectives and substantive provisions of the *Water Act 2007* and Basin Plan.
- Approximately $4 billion dollars has been spent on both on and off-farm infrastructure works in the MDB.[40] However, there is a dearth of information regarding how this money is being spent on a project-by-project basis, whether individual contracts are being properly implemented, whether water is actually being saved and so on. The lack of transparency and due diligence surrounding these projects can have potentially serious consequences. By way of example, a well-publicised investigation by the Major and Organised Crime Squad in Queensland resulted in an individual being prosecuted for allegedly defrauding the state of approximately $25 million dollars. The defendant was a beneficiary of the Healthy Headwaters Water Use Efficiency Project. The matter is ongoing.

[39] We obtained these details from Austender.

[40] S.A. Wheeler, E. Carmody, R.Q. Grafton, R.T. Kingsford, A. Zuo, The rebound effect on water extraction from subsidising irrigation infrastructure in Australia, *Resources, Conservation and Recycling*, Volume 159, 2020.

- Business cases for 36 supply measure projects mandated under the Basin Plan were not made public until well after they had been assessed by the MDBA and the associated legislative amendments to the Basin Plan had been adopted by Parliament. Similarly, the MDBA's assessment of these projects was not made public; as a consequence, the Commonwealth Senate compelled their production (thereby revealing the MDBA's concerns about most of the proposed projects). This sort of opacity cannot be justified, and as noted throughout this submission, simply widens the divide between government and many stakeholders.

Recommendations for Section 3

The next iteration of the NWI should emphasise the need for:

- Access to information including but not limited to: details of licensing, allocations and works approvals (available in a centralised, easy to use register); the details of key assessments, decisions and transactions concerning water management (such as business cases for infrastructure projects, efficiency program grants and strategic buybacks).
- Water agencies to cultivate and advance a culture of transparency and openness.

4. Sustainable levels of extraction

One of the overarching objectives of the NWI is to "complete the return of all currently overallocated or overused systems to environmentally-sustainable levels of extraction".[41] The EDO is concerned that there is either insufficient publicly available data to determine whether this objective has been met for certain river systems and aquifers, or in the alternative, that over-extraction clearly continues apace despite clear signals that major policy intervention is required to restore the health of key river systems and wetlands and to deliver more equitable outcomes for Aboriginal people and other downstream communities. The case study of Tasmania (below) is indicative of the former, while the Darling/Barka River, Menindee Lakes and Macquarie Marshes[42] (which is an internationally significant wetland listed under the Ramsar Convention on Wetlands) are all obvious examples of the latter.[43]

We also wish to note that over-extraction cannot be considered in isolation from climate change (we call this interaction the "over-extraction-climate change nexus") and that sustainable levels of extraction must factor in likely, future reductions in water availability (rather than being based on

[41] NWI, cl. 23 (iv).

[42] The Macquarie Marshes is an internationally significant wetland listed under the Ramsar Convention on Wetlands. It is located in north-western NSW and has experienced significant reductions in extent and ecological diversity as a consequence of extractions, including floodplain diversions. See (for example), Kingsford, Richard, Ecological impacts of dams, water diversions and river management on floodplain wetlands in Australia, *Ecology* (2000) 25, 109–127.

[43] Natural Resources Commission, *Review of the Water Sharing Plan for the Barwon-Darling Unregulated and Alluvial Water Sources 2012: Final report*, September 2019; Australian Academy of Science (2019). *Investigation of the causes of mass fish kills in the Menindee Region NSW over the summer of 2018–2019,* 2020.

the historic climate record, as is the case under the Basin Plan). These issues will be discussed in more detail in Section 5, below.

Case study: Tasmania

There are no publicly available reports prepared in Tasmania that provide an ongoing indication of the health of the state's rivers, wetlands and aquifers. The last State of the Environment report (**SoE**) was published in 2009; the subsequent SoE report is now four years overdue. In the absence of accurate reporting on the health of the state's rivers, wetland and aquifers, it is difficult to assess whether the water management planning regime has been effective in achieving its objectives of sustainable resource management.[44] This lacuna further undermines the ability of the community to participate in meaningful reviews of water management plans (where they exist), or to demand that water management plans be prepared (where they are lacking).

Case study: Western Australia

In 2014, the Department of Water and Environmental Regulation (**DWER**) produced the "Water Resources Inventory" which is described as "a state-wide picture of Western Australia's natural groundwater and surface water resources". Briefly, the report notes that water resources in the Perth, Peel and South West regions have been affected by reduced rainfall over the last three to four decades.[45] It further notes that there have been "significant declines in the potentiometric heads of the Leederville and Yarragadee aquifers" (located in the Peel region),[46] while groundwater of the appropriate quantity and quality is reported to be in short supply near high demand areas in the Pilbara region.[47]

In an independent assessment of the Gnangara groundwater system (**GGS**) (which forms part of the Perth north sub-region) undertaken in 2015, it was observed that wetlands, lakes and other groundwater-dependent ecosystems are seriously threatened by declining water levels.[48] Further, eighteen sites across the GGS were non-compliant with one of more ministerial water level criteria in 2012-13.[49]

[44] *Water Management Act 1999* (TAS), s. 6 (Objects) include (a) promote sustainable use and facilitate economic development of water resources.
[45] Government of Western Australia Department of Water, *Water Resources Inventory 2014: Water Availability, Quality and Trends* (May 2014) p. 10.
[46] Government of Western Australia Department of Water, *Water Resources Inventory 2014: Water Availability, Quality and Trends* (May 2014) p. 96.
[47] Government of Western Australia Department of Water, *Water Resources Inventory 2014: Water Availability, Quality and Trends* (May 2014) p. 26.
[48] James Skurray, 'The Scope for Collective Action in a Large Groundwater Basin: An Institutional Analysis of Aquifer Governance in Western Australia' (2015) 114 *Ecological Economics* 128, 131.
[49] James Skurray, 'The Scope for Collective Action in a Large Groundwater Basin: An Institutional Analysis of Aquifer Governance in Western Australia' (2015) 114 *Ecological Economics* 128, 131.

Recommendations for Section 4

The next iteration of the NWI should emphasise the need for:

- Ongoing monitoring and auditing of rivers, wetlands and aquifers to assess their "health" (across different indicators) and public reporting on the same at regular intervals.
- The fact that additional reform is required to ensure extractions are sustainable in many catchments – as well as ongoing dialogue about what this concept means in different contexts (highly developed versus pristine catchments, for example).

5. Climate change

The EDO is encouraged by the Productivity Commission's focus on climate change in its Issues Paper. While we imagine that the Commission is familiar with all relevant data concerning climate and water across Australia, we will include some brief commentary on these matters as helps to place our analysis and recommendations in context.

In the first instance, the BOM tells us that "the current drought has been taking place against the backdrop of consistently rising temperatures" with the MDB experiencing some of the most rapid warming over the last few decades[50] (the corollary of which is increased evaporation). April to October rainfall in south eastern and south western Australia has also been trending downwards since the 1990s. According to the State of the Climate Report 2018, 'the drying in recent decades across southern Australia is the most sustained large-scale change in rainfall since national records began in 1900.'[51]

This is reinforced by projections about the likely, future climate in NRM regions across Australia based on up to 40 global climate models. Projections for the Central Slopes and Murray Basin clusters (which cover the northern and southern MDB, respectively), indicate that there is a "very high level of confidence" that the following will occur: more hot days and warm spells in all seasons; decreased average winter rainfall; more extreme rainfall events; and a harsher fire weather climate.[52] For those who are interested, detailed information regarding climate projections for the entire continent at different scales can be found on the Climate Change in Australia website, which is a joint initiative of the CSIRO and BOM. These projections are a stark reminder – if ever we needed one – that the past is no longer a reliable predictor of the future; that managing our water resources on the basis of the historic climate record is a perilous pursuit.

Against this backdrop, we have considered what it means to for our laws to be "climate ready" and consider the elements set out in the table, below, important (some of which have been discussed in preceding sections of this submission):[53]

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[50] Bureau of Meteorology, *Special Climate Statement 70—drought conditions in eastern Australia and impact on water resources in the Murray–Darling Basin*, 09 April 2019, p. 23.
[51] CSIRO and Bureau of Meteorology, *State of the Climate Report 2018*, p. 7.
[52] CSIRO and Bureau of Meteorology, Climate Change in Australia website http://www.climatechangeinaustralia.gov.au/ (accessed 10 October 2019).
[53] See Carmody, Emma, *Are our water laws climate ready?* 10th Legalwise Water Symposium, 18th October 2019.

Case study: Key elements of climate-ready water laws

- an evidence-based cap on extractions at catchment and basin scales which is informed by climate projections;
- an adaptive water allocation scheme with an embedded climate projection signal;
- protecting environmental flows from extraction;
- protecting different components of the flow regime (from no flows to overbank flows), each of which is required to maintain ecosystem function;
- promotion of longitudinal and latitudinal connectivity. To clarify, this requires catchment-based legal instruments to speak to one another;
- in regulated river systems, managing public storages on the basis of climate projections, not historic climate data;
- accurately measuring and reporting water extractions (noting the difficulty of enforcing the law at the licence holder and catchment levels in the absence of reliable evidence);
- fulsome monitoring of groundwater resources, and appropriate limits on extractions which take into account connectivity with surface water, as well as the tendency to shift to consumption from aquifers during periods of water scarcity;
- accurate water accounting which, *inter alia*, takes into account return flows, water theft and floodplain harvesting;
- appropriate governance arrangements for subsidised irrigation modernisation projects, including a requirement to demonstrate that they are actually saving water;
- a requirement to ensure modelling for compliance purposes is based on latest levels of development and its assumptions are transparent and communicable;
- the inclusion of clear duties to, for example, act on the basis of best-available evidence and protect water resources from over-extraction;
- appropriately drafted civil and criminal offence provisions supported by an independent regulator, such as the NSW Natural Resources Access Regulator;
- third party standing (this is particularly important given the virtual impossibility of obtaining a writ of mandamus compelling the government to enforce its own laws); and
- more generally, provisions that are justiciable. While there is a clear need to furnish Ministers and their delegates with some discretion, broadly drafted powers can make it all but impossible for clients to seek judicial review of environmentally foolish decisions, which is deeply problematic. In short, hydrodenialism should give rise to the possibility of legal action.

We note that most of these elements listed in the table, above, are absent from water laws across Australia's various jurisdictions. Indeed, we are not aware of any individual water statute (or suite of statutes within a single jurisdiction) that contain all or most of these elements. We further note the strong push across many jurisdictions to use infrastructure (in particular dams) to "drought-proof" Australia. This is, in our view, problematic from a hydrological, cultural heritage and economic perspective. First, dams invite (or further entrench) unsustainable levels of extraction which, in a changing climate, is hardly advisable. Second, many proposed projects will, if approved, destroy or seriously damage aboriginal cultural heritage, which is incompatible with Indigenous environmental justice (to say nothing of free, prior and informed consent).[54] For example, the proposed Warragamba Dam development in NSW will increase flooding upstream, further damaging significant Indigenous sites, for example of the Gundungurra peoples,[55] while the proposed Urannah Dam in Queensland will flood significant cultural heritage sites across a wide area.[56] Third, it is not clear that a rigorous cost-benefit analysis has been undertaken for all proposed structures (by way of example, the proposed Dungowan Dam has been criticised on this basis).[57]

Recommendations for Section 5

The next iteration of the NWI should emphasise the need for:

- Climate-ready water laws and policies (as exemplified by elements outlined in the table, above).
- Due consideration of the impacts of proposed infrastructure projects on sustainable extraction limits in a changing climate and Aboriginal cultural heritage.

6. Aboriginal water rights

What's the use of land without water? We haven't even got a name if the river dies." Barkandji Elder, Uncle Badger Bates[58]

The provisions in the NWI concerning Aboriginal water rights and values are manifestly inadequate and in need of urgent reform. This reform must be led by Aboriginal people and result in tangible outcomes and justice, as opposed to aspirational and ultimately non-binding provisions in water legislation (which is largely the case at present). The gross inadequacy of existing governance and legal frameworks has been amply demonstrated in recently published research which revealed that Aboriginal people in the NSW portion of the MDB own a mere 0.2 percent of available surface water

[54] Deborah McGregor, Steven Whitaker and Mahisha Sritharan, Indigenous environmental justice and sustainability, *Current Opinion in Environmental Sustainability* 2020, 43:35–40.
[55] See for example: https://www.abc.net.au/news/2020-08-05/water-nsw-amends-warragamba-dam-wall-proposal/12527164 (accessed 10 August 2020); https://www.wollondillyadvertiser.com.au/story/6205440/indigenous-groups-condemn-state-governments-warragamba-dam-sacred-sites-investigation/ (accessed 10 August 2020).
[56] Bowen River Utilities, Initial Advice Statement, 30 March 2020, http://eisdocs.dsdip.qld.gov.au/Urannah%20Project/IAS/Urannah%20Project%20initial%20advice%20statement.pdf.
[57] See for example: https://www.smh.com.au/national/nsw/500-million-on-bugger-all-mayor-queries-dam-benefit-20200728-p55g8e.html (accessed 19 August 2020).
[58] See: *River Lore, Water Law* (2018) https://www.youtube.com/watch?v=DilRqCyNUHM

– despite comprising nearly 10 percent of the population.[59] While further research is required to clarify the situation in other catchments, it is highly unlikely that it is vastly different (and indeed, may be worse).

Aboriginal water dispossession has been exacerbated by the water reform process, in particular the separation of land and water and the creation of water markets[60] (which in the southern MDB have been valued at approximately $22 billion).[61] In the first instance, Aboriginal people do not identify with this separation; it is culturally anathema. As noted by water expert and Kamilaroi man, Bradley Moggridge:

> *The connection which Aboriginal people have with the land is intrinsically linked to the water and sky as well. We see them as a connected system, it's only in the Western way that they have been separated and exploited.*

Further, significant capital is required to purchase any meaningful quantity of water, which effectively excludes most Aboriginal people from partaking in the market.[62] Again, this is reflected in the statistics for the NSW portion of the MDB, cited above.

Beyond the MDB, important work is being done by the Martuwarra Fitzroy River Council to protect the Martuwarra Fitzroy River, located in the Kimberly region of Western Australia. The Council is using a collaborative governance framework to achieve its vision. Specifically, and as noted on its website:[63]

> *The Council conducts interdisciplinary and intercultural collaborative research in various domains and across disciplines including; First Law, culture, science, history, economics and development. Traditional Owners throughout the region and elsewhere, as well as the wide communities of people locally, regionally and internationally understand and connect to the Vision of the Martuwarra Fitzroy Council that:*
>
> ***Water sustains life;***
>
> ***Water and rivers deserve to be recognised as life-giving;***
>
> ***Water underpins cultural, spiritual and natural values.***

The EDO strongly supports the work, approach and objectives of the Martuwarra Fitzroy River Council and believes that a collaborative governance framework ought to be given due consideration in any reworking of the NWI. To support Aboriginal-led collaborative governance approaches, the relationship between water, native title, environment, land administration and cultural heritage legislation (at both Commonwealth and State/Territory levels) needs to be reviewed. Currently, the siloing of legislation is a significant barrier to Aboriginal peoples being able to propose and

[59] Lana D. Hartwig, Sue Jackson, Natalie Osborne, Trends in Aboriginal water ownership in New South Wales, Australia: The continuities between colonial and neoliberal forms of dispossession. *Land Use Policy* 99 (2020).
[60] Lana D. Hartwig, Sue Jackson, Natalie Osborne, Trends in Aboriginal water ownership in New South Wales, Australia: The continuities between colonial and neoliberal forms of dispossession. *Land Use Policy* 99 (2020).
[61] Aither, *Water Markets Report, 2018-19 and 2019-20 Outlook*.
[62] See for example: The Australian Water Partnership, *The effects of land and water separation on First Nations Peoples*, 2 March 2017.
[63] https://martuwarrafitzroyriver.org/about (20 August 2020).

implement their own governance models. In this context, we note the submission of the Martuwarra Fitzroy River Council to the *Inquiry into the destruction of 46,000 year old caves at the Juukan Gorge in the Pilbara region of Western Australia.*[64] Further, the EDO notes that there are currently reviews into the *Environment Protection Biodiversity Conservation Act 1999* (Cth)[65] and some cultural heritage legislation (such as the *Aboriginal Heritage Act 1972* (WA)).[66] A water perspective (and more particularly an Aboriginal perspective on water and its relationship to Country and living heritage) needs to be heard as part of these reviews, and in turn, any water reforms must consider the interaction between such statutes.

Recommendations for Section 6

The next version of the NWI should emphasise the need for:

- Aboriginal-led reform that generates genuine, legally binding "water justice" for Aboriginal people.
- Support, resourcing and encouragement of Aboriginal-led collaborative governance approaches (such as that promoted by the Martuwarra Fitzroy River Council).
- Review of the relationship between water, native title, environment, land administration and cultural heritage legislation (at both Commonwealth and State/Territory levels) and appropriate reform.

7. Water markets

Aboriginal water dispossession is in-and-of itself deeply concerning and requires urgent reform, as noted in Section 6, above. However, it also needs to inform a broader discussion about the appropriateness of water markets, their impact on what we call "water justice" and the assumption that moving water to its "highest value use" (as measured in economic terms) is inherently beneficial – and the best way to manage water in conditions of scarcity.[67] This is particularly pertinent in jurisdictions which do not yet have well-developed water markets. Put differently, a fulsome evaluation of the advantages and disadvantages of markets should be undertaken before any further steps are taken in said jurisdictions. This requires a reconsideration of one of the core objectives of the NWI, namely the "progressive removal of barriers to trade in water and meeting other requirements to facilitate the broadening and deepening of the water market, with an open trading market to be in place…".[68]

More generally, it is important for dialogue and subsequent reform to properly acknowledge that viewing water through an economic lens is merely one of many ways to ascribe meaning to rivers, aquifers and wetlands. Other values – spiritual, recreational, aesthetic, ecological (to name but a

[64] See link at: https://www.aph.gov.au/Parliamentary_Business/Committees/Joint/Northern_Australia/CavesatJuukanGorge/Submissions
[65] https://epbcactreview.environment.gov.au/
[66] https://www.dplh.wa.gov.au/aha-review
[67] This is seen as a core philosophical underpinning of the NWI. See for example: https://www.abs.gov.au/ausstats/abs@.nsf/latestproducts/F1E8586DC433EDFBCA2574A50014B2A8?opendocument (accessed 20 August 2020).
[68] NWI, cl. 23(v).

few) – also need to be properly acknowledged and adequately protected by law. We note that a collaborative governance framework – as advanced by the Martuwarra Fitzroy River Council in Western Australia (discussed in Section 6, above) – is arguably an effective approach for acknowledging and advancing these different values.

Recommendations for Section 7

The next version of the NWI should emphasise the need for:

- Careful analysis of the advantages and disadvantages of water markets, including proper consideration of perverse impacts on Aboriginal people;
- Careful consideration of the different values associated with rivers, wetlands and aquifers when developing water management laws and policies (and consideration of the impact of water markets on these values).

8. Groundwater

A key objective of the NWI is the "recognition of the connectivity between surface and groundwater resources and connected systems managed as a single resource."[69] However, it has been suggested that current water planning practices don't necessarily reflect four key elements of connectivity, namely:[70]

- Dynamism: connectivity between surface and groundwater is dynamic over time. This requires careful licence-by-licence consideration, rather than generic application of water plan requirements that do not take into account the specifics of a given scenario.
- Long time scales: water plans are generally vague about the time scales that they contemplate (in relation to impacts) and tend to require a relatively high degree of interaction before the potential for adverse effects is recognised.
- Accumulation: controls over groundwater generally assume that relatively small withdrawals can be ignored. However, evidence indicates that they can become cumulatively significant.[71]
- Biophysical environmental elements of water systems: water systems comprise multiple biophysical environmental elements which interact with surface-groundwater connectivity. Water planning does not necessarily reflect these relationships.[72]

We further note that monitoring and metering of groundwater resources tends to be sub-optimal, which undermines attempts to improve understanding of, and properly manage, surface-groundwater connections. For example, in NSW many categories of bores are not required by law to be metered (for example those used for stock and domestic purposes) and all are exempt from the

[69] NWI, cl. 23(x).
[70] Nelson, Rebecca, *Groundwater, rivers and ecosystems: comparative insights into law and policy for making the links*, Australian Environment Review, June 2013.
[71] However, the interception activity provisions in the Basin Plan represent a reasonable attempt to address this issue.
[72] Nelson, Rebecca, "Challenges to Improved Integrated Management of the Murray-Darling Basin" in Barry Hart, Nick Bond, Neil Byron, Carmel Pollino and Mike Stewardson (eds), *The Murray-Darling River System: Its Future Management from Catchment to Coast* (Elsevier, in press) 26pp.

telemetry provisions that were introduced in 2018.[73] Similarly, in the Queensland MDB, diversions from most groundwater sources are not metered.[74] Furthermore, in Tasmania, there is no requirement to hold a licence to draw water from a bore outside of a Declared Groundwater Area (of which there is currently only one).[75]

Uncertainty regarding extractions from groundwater sources is of particular concern during times of reduced surface water availability. According to the BOM, "[d]rought can cause groundwater use to increase as surface water becomes scarce and allocations are reduced…".[76] Furthermore, as groundwater entitlements are generally underutilised, climate change could cause sleeper licences to "wake up en masse" which would leave us "in uncharted territory in terms of impact on local communities and environments…".[77]

Recommendations for Section 8

The next version of the NWI should emphasise the need for:

- Water planning practises and rules that:
    - reflect that surface-groundwater connectivity is dynamic over time;
    - clearly articulate the timeframes that are being contemplated vis à vis adverse impacts, and which prioritise a precautionary approach;
    - reflect the fact that cumulative impacts can be significant over time; and
    - reflect the interdependent relationship between biophysical environmental elements of water systems, and the impact of these interactions on surface-groundwater connectivity.
- Appropriate monitoring of groundwater resources, and metering of bores.

9. Collaborative governance

Australia is fortunate to benefit from the expertise of a diverse range of stakeholders, Aboriginal people with deep knowledge of their Country and water professionals working across government, academia, the private sector and in non-government organisations. Many people enjoy working collaboratively and in cross-disciplinary contexts, and actively seek out opportunities to connect with individuals from different backgrounds with a view to learning and "building bridges". However, on balance, water governance in this country (as in many countries) tends to be top-down and technocratic, which in many instances limits opportunities for exchange, dialogue and collective problem solving.

While consultation is referred to in the NWI and is built into most water reform processes, many clients tell us that they do not think that they are able to influence outcomes through consultation processes (as they perceive outcomes as being largely pre-determined). Put differently, for many

[73] *Water Management (General) Regulation 2018* (NSW), s. 231(1)(d); Schedule 8(6)(2)(b).
[74] *Water Act 2000* (QLD); *Water Regulation 2016* (QLD).
[75] WMA, ss. 48(4A), 124A(2).
[76] Bureau of Meteorology, *Special Climate Statement 70—drought conditions in eastern Australia and impact on water resources in the Murray–Darling Basin*, 09 April 2019, p. 20.
[77] https://pursuit.unimelb.edu.au/articles/managing-the-hidden-water-beneath-our-feet (Accessed 15 October 2019).

people the process itself lacks legitimacy which in turn means that they are suspicious of, and unwilling to accept, outcomes.

This is unsurprising as there is a great deal of empirical data which suggests that people *must be engaged in the process of making the decision* rather than just "consulted" if they are to consider both process and outcome as legitimate. To that end, there is strong evidence that more collaborative and deliberative approaches to water governance could help to improve decision-making processes, reduce conflict and generate outcomes that have greater "buy-in" across affected groups.[78] However, for such processes to be successful, they must be genuinely representative, culturally appropriate[79] and any underlying power and knowledge imbalances must be addressed.[80]

Case study: Aboriginal "consultation"

Consultation frameworks typically involve gathering people in a room for a relatively short period of time and attempting to expeditiously "extract" key information and distil it into a series of dot points. However, recent research indicates that some Aboriginal people may only feel comfortable communicating key information about Country and custom informally, whilst on Country and intermittently over a period of days or weeks.[81] The researchers, who interviewed members of the Euhlaroi and surrounding language groups (from the northern MDB) about the Narran Lakes, noted that:

> *It was often not possible to 'schedule' interviews, and where they were scheduled it was not uncommon for cultural or family obligations to arise which meant the interviewee missed the interview. Hence it proved more productive to simply be ready to conduct the interview whenever the interviewee was ready. This required 'hangin' out'.*[82]

Aboriginal people may also use storytelling to communicate empirical evidence about the natural environment.[83] Again, this may not be properly captured in traditional consultation settings, and may be mistaken as "myth" rather than a form of evidence regarding biological processes and the relationship that these processes have with customary practices.

[78] See for example: Richard B. Norgaard, Giorgos Kallis, Michael Kiparsky, Collectively engaging complex socio-ecological systems: re-envisioning science, governance, and the California Delta, *Environmental Science and Policy* 12 (2009) 644-652; OECD (2020), *Innovative Citizen Participation and New Democratic Institutions: Catching the Deliberative Wave*, OECD Publishing, Paris, 20; Nicole Curato, John S. Dryzek, Selen A. Ercan, Carolyn M. Hendriks & Simon Niemeyer, Twelve Key Findings in Deliberative Democracy Research, *American Academy of Arts & Sciences*, 2017.

[79] For example, standard "workshops" are not always culturally appropriate.

[80] See for example: Jennifer Dodge, Environmental justice and deliberative democracy: How social change organizations respond to power in the deliberative system. *Policy and Society*, Volume 28, 2009 - Issue 3: Deliberative Governance in the Context of Power.

[81] Davies, S, Wilson, J, Ridges, M, Redefining 'cultural values' – the economics of cultural flows, *Australian Journal of Water Resources* (July 2020).

[82] Ibid, p. 9.

[83] See for example: Hamacher, D, Stories from the sky: astronomy in Indigenous knowledge. *The Conversation*, December 1, 2014. Available online: https://theconversation.com/stories-from-the-sky-astronomy-in-indigenous-knowledge-33140 (accessed 5 August 2020).

As noted in Section 6 of this submission, the EDO strongly supports the collaborative governance framework that is being developed by the Martuwarra Fitzroy River Council. However, as also noted above, there are significant barriers to Aboriginal peoples being able to propose and implement their own collaborative governance models. Any future iteration of the NWI must prioritise establishing a model where Aboriginal-led collaborative governance models are encouraged, supported and resourced.

Recommendations for Section 9

The next version of the NWI should emphasise the need for:

- Deliberative, culturally appropriate, collaborative processes that allow participants to be properly *engaged in the process of making decisions* (rather than merely being "consulted" before a decision is made by government).
- Aboriginal-led collaborative governance models that are encouraged, supported and resourced.

10. Water quality

The EDO notes that the "Objectives" and "Key Elements" of the NWI do not explicitly mention water quality, and more generally that it tends to be separated out from other water planning and land use legislation. However, water quality is often linked to water quantity and/or development (of different stripes) and accordingly ought to be dealt with in a more integrated fashion. Similarly, binding water quality objectives for rivers and aquifers need to be built into jurisdictional legislation. In making this comment, we note that Tasmania, for example, does not have published (or binding) water quality objectives.

Furthermore, water quality is linked to fundamental human rights (notably the Right to Life)[84] and is an element of Sustainable Development Goal 6 (**SDG 6**). Regrettably, the EDO has many Aboriginal and non-Aboriginal clients across numerous jurisdictions who are unable to routinely access water that is safe to drink or bathe in and who are consequently unable to fully exercise their Right to Life. This is a function of a range of factors, including poor water management (for example ongoing over-extraction, which can increase salinity and the likelihood of algal blooms) and systemic racism (which results in the de-prioritisation of clean water supply to Aboriginal communities).

EDO lawyers have direct experience of this issue, having spent time with several clients in north-western NSW whose only source of water for domestic use – the river – was contaminated with blue-green algae. Accordingly, these people (and many others) were forced to buy bottled water for drinking and brushing teeth, and could not shower or bathe at home. One client had to drive 100km to the nearest town to shower once a week at the local swimming pool. It has been found that

[84] The Right to Life is an established human right and is notably recognised in Article 6 of the International Covenant on Economic, Social and Cultural Rights (which is binding under international law).
For further discussion, see for example: Pollak, Sophie, *Water for Life: Does the Right to Life Include Access to Water? A Discussion of the Overlapping Aspects of the Right to Water and the Right to Life* (November 11, 2014).

ongoing over-extraction contributed to the blue-green algal outbreak in the Darling/Barka River and Lower Darling, and subsequent fish kills in the Menindee Lakes and Lower Darling.[85]

Recommendations for Section 10

The next version of the NWI should emphasise the need for:

- Legislated water quality objectives that must be considered as part of all relevant decision-making processes concerning water and land management.
- Governments to guarantee access to clean drinking water and water for domestic use, as per the Human Right to Life and SDG 6.

END

[85] Australian Academy of Science (2019). *Investigation of the causes of mass fish kills in the Menindee Region NSW over the summer of 2018–2019.*