Environmental Defenders Office

EDO Briefing Note: Northern Territory Draft Surface Water Take – Wet Season Flows Policy and Draft Interference with a Waterway Guideline

This Briefing Note addresses two draft Northern Territory policies recently released for public consultation:

1. The Draft Surface Water Take – Wet Season Flows Policy (**Draft WSF Policy**); and
2. Draft Interference with a Waterway Guideline (**Draft Guideline**),

(the **Draft Policies**).

Further information is available on the Have Your Say webpage. You can submit comments on the Draft Policies until **9 January 2023**.

Summary

Part 1 of this Briefing Note sets out some relevant context to the Draft Policies, provides a brief explainer about the legislative framework, and describes the Draft Policies.

Part 2 explains floodplain harvesting (**FPH**), interrogates the debate about whether the Draft Policies seek to regulate FPH, and discusses the value of drawing comparisons with the Murray Darling Basin (**MDB**). In Part 2, we find that the Draft Policies:

- Cover the practice known as FPH but are not confined to it. They relate to all forms of take of wet season flows (whether by FPH or otherwise).
- Do not change the law, which is set out in the *Water Act 1992* (NT) (**Water Act**) and the *Water Regulations 1992* (NT) (**Water Regulations**). To the extent that the licensing of FPH is lawful in the Territory, this is because of the content of the Water Act and Regulations not because of the Draft Policies.
- Will guide decision-making in relation to water licences. Importantly, we find that they will likely facilitate the expansion of water extraction (including by way of FPH) during the wet season in the Top End.

We also find that, whilst direct comparisons between the NT and the MBD do reveal obvious contextual differences, it would nonetheless be remiss of the NT Government to ignore the important lessons that can be learned from the MDB experience.

Part 3 identifies what we consider are the major deficiencies of the Draft Policies. In Part 3, we find:

- The proposed setting of extraction limits absent any form of statutory water plan is entirely inconsistent with the NT Government's commitments under the National Water Initiative

(**NWI**). This would be a disappointing regression in the NT's already problematic regulatory framework.[1]

- Although the Draft WSF Policy's commitment to "science" when determining water availability sounds encouraging, important details are missing. In particular, the Draft WSF Policy fails to grapple with the intersection between scientific information and policy making, where the application of science to water allocation decisions is necessarily informed by value judgments about competing social, economic and environmental issues.
- The reliance of the Draft Guideline on self-assessment risks the rapid expansion of smaller structures being built by applicants who incorrectly conclude that the threshold for a permit application has not been reached. This is compounded by a draft self-assessment tool that is itself unclear. There is also the real risk that adopting a self-assessment approach will mean the Government lacks critical information about the existence and nature of structures that divert water.

Part 1 – The Draft Policies in context

Policy context

The Draft Policies come among expectations of significant growth in the cotton industry in the NT over the coming years.[2] The NT Government acknowledges that while most production currently comes from dryland cotton (which relies on rainfall), it is likely that irrigated cotton production will expand as the industry grows.[3] Irrigated cotton production requires a water licence under the *Water Act 1992* (NT). The Draft WSF Policy provides the framework for determining the total volume of wet season flows available to licence holders within a given area of the Top End of the NT.

The bulk of Australia's cotton is grown in the northern MDB. Cotton growers in NSW have been at the centre of protracted and heated public debate regarding the practice of FPH and the appropriate management of water resources. In November 2020, the NSW Independent Commission Against Corruption determined in relation to water management that chronic underfunding, organisational dysfunction and a lack of commitment to compliance "created an atmosphere that was overly favourable to irrigators".[4]

Unsurprisingly, public debate has emerged as to whether the Draft Policies will introduce the controversial practice of FPH in the NT, including whether there are risks of the NT making

[1] See our previous Briefing Notes, available here: https://www.edo.org.au/publication/briefing-note-deficiencies-in-the-existing-water-law-and-governance-framework-in-the-northern-territory/.
[2] Beaumont T, Pursey A, Booth C. A fork in the river: The consequences of a major new cotton industry in the Northern Territory, Centre for Conservation Geography, 2022, available here: https://territoryrivers.org.au/wp-content/uploads/2022/08/NT_Cotton_Report_lowres.pdf; ABC Rural, "NT's first cotton gin nears completion as Katherine council considers stance on industry" (18 May 2022), available here: https://www.abc.net.au/news/2022-05-18/nt-first-cotton-gin-forges-ahead-katherine-council-weighs-stance/101071674; ABC Katherine, "Snow in the NT? That's cotton littering the Stuart Highway near Katherine and locals aren't happy" (17 September 2022), available here: https://www.abc.net.au/news/2022-09-17/roadside-cotton-concerns-in-katherine-nt/101449896; Peter Cottle, "Northern Territory Cottoning on to Cotton", *Grow NT Magazine* (September 2020) pp 20-21.
[3] Department of Industry, Tourism and Trade, "Cotton in the Northern Territory – Facts and Stats", pp 9-10, available here: https://industry.nt.gov.au/__data/assets/pdf_file/0005/1062518/cotton-facts-and-stats.pdf.
[4] Investigation into Complaints of Corruption in the Management of Water in NSW and Systemic Non-Compliance with the *Water Management Act 2000* (2020), p 142. We note that ICAC did not identify any instances of corrupt conduct.

mistakes similar to those that have been experienced in the MDB.[5] At the same time, there has also been disagreement about whether it is appropriate to compare water management developments in the Territory with the experience of the MDB.[6]

This Briefing Note seeks to provide clarity to stakeholders regarding these key issues.

The legislative framework

To understand the proposed impact of the Draft Policies, it is necessary to consider the legislative context.

Generally, a licence is required to take surface water for irrigation in the Northern Territory.[7] Licences are granted by the Controller of Water Resources (**Controller**) who holds certain decision-making powers under the Water Act.

It is also, generally, an offence to "interfere with a waterway" without a permit.[8] Examples of interfering with a waterway include constructing waterway crossings (such as road or pipeline bridges), flood protection, and installation of surface water structures and structures such as dams.[9] The Controller grants permits to interfere with a waterway. When deciding to grant a surface water licence, or a permit to interfere with a waterway, the Act requires the Controller to have regard to several factors. These include such things as the availability of water and any water allocation plan (**WAP**) applying to the area in question. Specifically, pursuant to section 90(1)(k) of the Water Act this also includes "other factors the Controller considers should be taken into account or that the Controller is required to take into account under any other law in force in the Territory".

The total volume of water available for consumptive uses from a specific water resource, or within a given area, (referred to as the **consumptive pool**) is not explicitly determined by the Act or the Regulations. Where a WAP is in place (approximately 5% of the NT[10]) it will determine the consumptive pool.[11] Otherwise, the NT Water Allocation Planning Framework applies. This is a policy document which provides that in relation to rivers in the Top End of the NT the consumptive pool is limited to 20% of river flows (**Current Contingent Allocation Rule**). When making licence decisions under the Act, it is standard practice for the Controller to apply the Current Contingent Allocation Rule where no relevant WAP is in place.[12]

If finalised, the Draft Policies will not change the law, which is set out in the Act and the Regulations. However, as detailed below, the Draft WSF Policy will change the way in which the consumptive pool will be determined in relation to the wet season flows in the Top End of the NT. The Draft WSF Policy expressly states it is a relevant factor for the purpose of s 90(1)(k) of the Act. While this is a matter for the Controller, it is very likely the Controller would consider the Policy as a relevant consideration when assessing licence applications. In other words, it is very likely that

[5] See for example: Kirsty Howey, "Floodplain harvesting killed the Murray Darling, now the Gunner Government wants to bring it here, writes ECNT" (opinion piece), *Katherine Times* (online, April 20 2022), https://www.katherinetimes.com.au/story/7706292/the-gunner-government-wants-to-bring-floodplain-harvesting-to-nt/; "New plan for taking Northern Territory water from wet season flows", *NT Country Hour,* ABC Radio (broadcast 8 November, 2pm).
[6] Ibid.
[7] Water Act, ss 43-46.
[8] Water Act, ss 40-42.
[9] Draft Interference with a Waterway Guideline, p 6.
[10] William Nikolakis & R. Quentin Grafton "Law versus justice: the Strategic Aboriginal Water Reserve in the Northern Territory, Australia" International Journal of Water Resources Development, (2022) 38:1, 11-29, DOI: 10.1080/07900627.2021.1882406.
[11] WAPs are discussed in further detail below.
[12] This is evident from a review of the Controller's decisions available on the NT Surface Water Extraction Licence Register.

the consumptive pool for wet season flows, as determined pursuant to the Draft WSF Policy, will then be applied when determining whether and in what form to grant licence applications. This includes those that would permit FPH.

The Draft Interference Guideline provides guidance to applicants regarding the information they must provide when seeking a permit to interfere with a waterway. It does not expressly purport to be a relevant factor for the Controller when considering these applications. However, the Controller may nevertheless have regard to it when considering, for example, the adequacy of supporting materials provided with a permit application.

The Draft Policies

The Draft WSF Policy

The Draft WSF Policy provides rules for determining the volume of water that may be taken from rivers in the Top End of the Territory during the wet season.[13] The stated purpose of the WSF Policy is to "establish allocation rules for quantifying wet season water flow volumes available for consumptive use from a river basin".[14] It is an adjunct to the existing Northern Territory Water Allocation Planning Framework which determines the volume of water available during the dry season.[15]

The Draft WSF Policy states that the volume of water available for extraction will be determined by applying the following hierarchy:

Allocation of wet season flows for consumptive uses	
1. Scientific Research	Where scientific research is available: "[r]elevant, available scientific research establishes the maximum volume of water that may be extracted from the relevant river basin, while maintaining important hydraulic conditions, environmental and cultural water requirements."
2. Contingent Allocation Rule	Where scientific research is not available: "The consumptive pool is calculated as 5 per cent of the 25th percentile of total flows for the three highest flow months of the year (generally January, February and March)." The Draft WSF Policy explains contingent allocation determined under this rule would be approximately 2% of median annual flow. The Department of Environment, Parks and Water Security (**Department**) has released a fact sheet further explaining the application of this rule.

[13] Where no statutory water allocation plan is in place, water management in the Territory is divided between the "top end" and the "arid zone". The top end is roughly the northern third of the Territory. Further information can be found in the Water Resources division Technical Report 55/2020, "Classification of the Top End and Arid Zone for Northern Territory water resources", available here: https://territorystories.nt.gov.au/10070/843257/0/0.

[14] Draft WSF Policy, p 5.

[15] The Northern Territory Water Allocation Planning Framework is available here: https://depws.nt.gov.au/__data/assets/pdf_file/0011/476669/nt-water-allocation-planning-framework.pdf.

Although it is not clear how the proposed contingent allocation rule was determined, this Briefing Note largely focusses on the first limb of the hierarchy. This is because the first limb provides no certainty as to the actual volumes that will be made available for extraction. As discussed below, the purported reliance on science risks opaque decision-making and may lead to perverse outcomes.

The Draft Interference Guideline

The Draft Guideline sets out the information that applicants will be required to provide when applying for a permit to interfere with a waterway. Applicants are to determine this themselves by conducting a "self-assessment" process in accordance with the Guideline. For example, no permit is required where an applicant determines, by way of self-assessment, that their proposed actions will "not cause a material change" to a waterway.

Part 2 – Floodplain harvesting, the NT and the Murray Darling Basin

What is floodplain harvesting?

Floodplain harvesting occurs during wet periods when large volumes of water breakout over the riverbank and spread out across vast floodplains (known as overbank or overland flows). As water moves across these flat expanses, long, low engineered structures such as access roads, channels and levee banks can intercept and divert considerable volumes of water that would otherwise have remained as wetland habitat, flowed downstream, or soaked into aquifers. This water is then generally stored in on-farm dams or off-river storages; these can be considerable in size. As well as capturing overbank flows, these storages may also capture rainfall runoff that would otherwise flow into rivers.[16]

Do the Draft Policies regulate FPH?

To accurately determine the extent to which the Draft WSF Policy applies to FPH, it is necessary to consider the relevant statutory definitions in the Water Act.

The Draft WSF Policy relates to the granting of licences for a person to take "water" under section 45 of the Water Act. In section 45 of the Act, water "means water flowing or contained in a waterway" (emphasis added). The application of the Policy therefore largely depends on the meaning of "waterway", which is itself defined in the Act.

The definition of "waterway" in the Act is expansive and includes (section 4):

1. "a river, creek, stream or watercourse";
2. "a natural channel in which water flows, whether or not the flow is continuous";
3. "a channel formed wholly or partly by the alteration of relocation of a waterway described in [1] or [2] above";
4. "a lake, lagoon, swamp or marsh, whether formed by geomorphic processes or modified by works (i) in which water collects, whether or not the collection is continuous, and (2) into,

[16] Specific definitions of FPH vary slightly across jurisdictions. See for example, the NSW Floodplain Policy and the definition of FPH at clause 1.07 of the *Basin Plan 2012* (Cth).

through or out of which a current (which forms the flow or part of the flow of a river, creek, stream or watercourse) passes, whether or not that passage is continuous"; and

5. "land which is intermittently covered by water from a waterway… but does not include any artificial channel or work which diverts water away from such a waterway".

In addition to the above, upon an application, the Minister may declare any land to be a waterway if it is land:

> "(a) over which water collects or flows, whether or not the flow or collection is continuous; or
>
> (b) adjacent to land that is otherwise a waterway".[17]

The definition of "waterway" in the Water Act covers overbank flow onto floodplains, because it includes "land which is intermittently covered by water from a waterway".[18] Therefore, the Draft WSF Policy does cover the practice known as FPH.

The Draft Interference Guideline relates to the grant of permits to interfere with a "waterway" under section 41 of the Act. Therefore, the Interference Guideline also applies to the practice commonly known as FPH. The Guideline even provides examples of activities which may require a permit, including installation of:

- "surface water diversion structures";
- "water retention structures [sic], such as a dam, or barrage"; and
- "installation of an off-steam water storage within a waterway".

Such works are often associated with or used for floodplain harvesting.

What does the Government say about this?

The Department's "Q&A" document released with the Draft Policies claims that the surface water take of wet season flows (**WSF Take**) "does not provide for or regulate floodplain harvesting as it is defined in southern jurisdictions".[19] However, the very same page states that "[u]nder Territory legislation water coming from a watercourse or wetland onto a floodplain is considered a waterway and will be regulated under the policy." As indicated above, the capture of overbank flows from floodplains is a form of floodplain harvesting. As such, the Q&A Document contradicts itself.

The Q&A Document appears to imply that WSF Take is distinct from FPH because FPH includes both overbank flows *and* rainfall runoff. This distinction is disingenuous because the capture of rainfall runoff may form part of common definitions of FPH, but it is not a prerequisite element. Regardless, the Centre for Ecosystem Science at the University of NSW explains that it is "impossible to separate out works that are separately designed to harvest river or floodplain flows from those designed to harvest rainfall". This is because water falling on floodplains will naturally follow the same channels as overbank flows.[20]

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[17] Water Act, s 5. The Minister may only make such a declaration if they are satisfied of the matters set out at s 5(2)(a)-(b).
[18] See specifically subsections (e) & (f) of the definition of "waterway" in s 4 of the Water Act.
[19] Department of Environment, Parks and Water Security, *The Facts: Surface Water Take – Wet Season Flows Policy*, p 2, available here: https://haveyoursay.nt.gov.au/77026/widgets/371869/documents/231385.
[20] UNSW Centre for Ecosystem Science, *Submission on Implementing the NSW Floodplain Harvesting Policy and Better Management of Environmental Water – Consultation Papers*, p 5.

So, is this a FPH Policy?

The Draft WSF Policy is much broader than just a FPH policy. The WSF Policy covers the take of all wet season flows, whether via FPH or any other method of extraction.

It is also vital to recognise that the Draft WSF Policy does not change the law and therefore does not increase the scope of licences that may lawfully be granted under the Act. It is likely already lawful for licences to be issued for FPH under the Act due to the expansive definition of "waterway" as discussed above.

However, as discussed above, the Policy will inform the Water Controller's decision making under the Act and for this reason it is likely to facilitate an increase in wet season water extraction in the Top End (including by way of FPH). Among other things, this takes into account the context of the expanding cotton industry and the growing interest among irrigators to engage in FPH in the NT.[21]

What's the problem with FPH?

FPH has become a matter of controversy and regulatory complexity in NSW. It is no surprise that the development of policies that will influence FPH regulation in the NT has prompted concern that the NT will repeat the mistakes made in the MDB.

In the MDB, tens of thousands of kilometres of structures harvest large volumes of floodplain flows for irrigation and other purposes,[22] and total diversions have increased significantly in the last 2-3 decades.[23] This water would otherwise have supported floodplain and wetland habitats and contributed to water for downstream communities and ecosystems. The reduced flow and connectivity contributes to the poor health of rivers and floodplains.[24] FPH was implicated in the mass fish kills in 2018/2019[25] and some argue that FPH is killing the MDB and is inconsistent with the Basin Plan and the *Water Act 2007* (Cth) (**Commonwealth Water Act**).[26] Widespread FPH by the cotton industry in the northern MDB has been said to restrict opportunities for more diverse irrigation operations in the southern basin and contributed to poor social outcomes such as unemployment.[27] It has also been criticised for impacting the health and wellbeing of downstream First Nations communities and for contributing to the destruction of Aboriginal cultural heritage.[28]

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[21] For example, NT Farmers have indicated that up to 520GL of overland flows in the Daly River system may be available for agricultural and horticultural development. See: NT Farmers, *Northern Territory Plant Industries Economic Impact Analysis*, p 35, available here: https://ntfarmers.org.au/wp-content/uploads/2021/07/NT_Plant_Industries_Economic_ImpactAnalysis_document_final-2020_compressed.pdf; Andrew Ash et al. "Irrigated agricultural development in northern Australia: Value-chain challenges and opportunities, *Agricultural Systems 155* (2017) 116-125, http://dx.doi.org/10.1016/j.agsy.2017.04.010.

[22] Wentworth Group of Concerned Scientists and EDO Joint Submission to the Inquiry into the NSW Government's Management of Floodplain Harvesting (August 2021); Steinfeld, C.M.M. and Kingsford, R.T., "Disconnecting the Floodplain: Earthworks and Their Ecological Effect on a Dryland Floodplain in the Murray–Darling Basin, Australia", *River Research and Applications*, (2011) 29: 206-218. https://doi.org/10.1002/rra.1583.

[23] Australia Institute, *Six reasons to stop floodplain harvesting in NSW* (December 2021), available here: https://australiainstitute.org.au/wp-content/uploads/2021/12/P1186-Six-reasons-to-stop-floodplain-harvesting-WEB.pdf; Patrick Brown et al, "An unsustainable level of take: on-farm storages and floodplain water harvesting in the northern Murray–Darling Basin, Australia", *Australasian Journal of Water Resources* (2022) 26:1, 43-58, https://doi.org/10.1080/13241583.2022.2042061.

[24] Richard T. Kingsford, 'Conservation of floodplain wetlands – out of sight, out of mind?', *Aquatic Conservation: Marine and Freshwater Ecosystems 25* (2015) 727, https://doi.org/10.1002/aqc.2610.

[25] Australian Academy of Science (2019). Investigation of the causes of mass fish kills in the Menindee Region NSW over the summer of 2018–2019, available here: https://www.science.org.au/files/userfiles/support/reports-and-plans/2019/academy-science-report-mass-fish-kills-digital.pdf.

[26] Australia Institute, (n 23).

[27] Ibid, p 5.

[28] Dharriwaa Elders Group, Murray Lower Darling Rivers Indigenous Nations & EDO, "Manifestations of Aboriginal water dispossession in Australia's Murray-Darling Basin, Submission responding to a call by the UN Special Rapporteur on Human Rights and the Environment, p 5; MDRIN Submission to the NSW Select Committee on Floodplain Harvesting (August 2021).

These negative outcomes arose because FPH in the MDB has largely been unregulated. For example, much FPH in NSW remains unlicensed and government attempts to appropriately regulate the practice have been slow and politically contentious.

This is because FPH has become notoriously difficult to regulate in the MDB. Many floodplain structures were built without necessary approvals and there is limited available information regarding the number of structures or where they are located. Even where they are identified, estimates regarding the volume of water that structures take from floodplains can vary considerably.

Aren't NT Rivers different to those in the MDB?

Rivers in the NT have been subject to relatively limited water resource development to date compared to those in the MDB.[29] They are further differentiated due to the differing climates and associated differences in the natural quantity, duration and pattern of flows (together known as 'flow regimes').

However, despite their differences, the health of all rivers and their dependent ecosystems largely depends on the maintenance of natural flow regimes.[30] The ecological consequences of changing flow regimes must be understood, and appropriate management solutions implemented, *prior to* significant extraction of water. For example, in relation to the Daly River, research on behalf of the NT Government conducted almost 20 years ago determined that "flow regimes and environmental water requirements… must be understood to set appropriate environmental flows and water licence conditions for large scale agricultural development and associated vegetation clearing."[31] More recent research has emphasised that there remains a high degree of uncertainty regarding flow regimes in the seasonal tropics: "the lack of high-resolution and long-term hydrological data continues to limit our hydrological understanding as well as the robustness of water resources assessments and thereby water allocation policy."[32]

It is well established that in the Top End the seasonal inundation of floodplains underpins processes that contribute to river productivity and resilience.[33] The NT Government's *Katherine Tindall Limestone Aquifer Water Allocation Plan 2019* notes that altering the size, timing and duration of floods may cause the loss of important functions that floods provide.[34] This is consistent with research on tropical riverscapes of Northern Australia, finding that altering the natural flood regime is "likely to be detrimental and severely 'test' the resilience of river systems and possibly lead to a change of state".[35]

Therefore, while rivers in the NT differ from those in the MDB:

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[29] Clement Duvert et al., "Hydrological processes in tropical Australia: Historical perspective and the need for a catchment observatory network to address future development", *Journal of Hydrology: Regional Studies* 43 (2022) 101194, p 2, https://doi.org/10.1016/j.ejrh.2022.101194.

[30] Mohd Sharjeel Sofi et al, "The natural flow regime: A master variable for maintaining river ecosystem health", *EcoHydrology* 13 (8), https://doi.org/10.1002/eco.2247; Mark J Kennard et al, "Classification of natural flow regimes in Australia to support environmental flow management", *Freshwater Biology* (2009), https://doi:10.1111/j.1365-2427.2009.02307.

[31] Erskine WD et al, Recommended environmental water requirements for the Daly River, Northern Territory, based on ecological, hydrological and biological principles. Supervising Scientist Report 175 (National River Health Program, Environmental Flows Initiative, Technical Report 4) p v, available here: https://www.dcceew.gov.au/sites/default/files/documents/ssr175-daly-river-env-flows.pdf.

[32] Clement Duvert et al., (n 29), p 12.

[33] Neil E Petit et al, "Productivity and Connectivity in Tropical Riverscapes of Northern Australia: Ecological Insights for Management" *Ecosystems (2017) 20: 492–514*, p 493, https://doi.org/10.1007/s10021-016-0037-4.

[34] Katherine Tindall Limestone Aquifer Water Allocation Plan 2019-2024, p 65.

[35] Neil E Petit et al, (n 33), p 506.

- all rivers and river systems are susceptible to negative impacts from excessive water extractions, including by way of FPH; and
- it is critical that flow regimes and the ecological consequences of interfering with flow regimes are understood *before* implementing policies to permit or facilitate increased water extraction.

Are comparisons between the MDB and the NT fair?

The Q&A Document states that comparisons being made by stakeholders between the NT and the MDB are unfair and "designed to scare people intentionally". Whilst contextual differences need to be considered in making comparisons between the NT and the MDB, it would be remiss of the NT Government to ignore the important lessons that can be learned from the MDB experience. In particular, the MDB experience demonstrates the potential for serious and widespread negative impacts (including to ecosystems, First Nations peoples and river communities) caused by increased water extraction (and FPH in particular) and lack of necessary regulation. This experience emphasises the need for a strong and effective regulatory framework and the importance of understanding rivers and ecosystems before allowing or facilitating increased extraction. There is an opportunity to learn from the mistakes that have been made in the MDB and to ensure that FPH does not cause significant harm in the NT.

A critical lesson from the MDB is that it is almost impossible, and enormously expensive, to unwind unsustainable levels of extraction once locked in. In particular, the unregulated development of FPH in NSW over decades has made it particularly difficult for the Government to now appropriately regulate the practice. This demonstrates the need to get it right from the start.

A good starting point for "getting it right" is the introduction of statutory water plans that are consistent with the NT Government's commitments under the NWI. Part 3 of this briefing note identifies that the Draft WSF Policy is entirely inconsistent with these commitments.

Part 3 – The Draft Policies are a backwards step

Determination of consumptive pools inconsistent with NWI

In our **October Briefing Note** we explained that, as a signatory to the NWI, the NT Government committed itself to preparing statutory water plans. In the NT these are known as water allocation plans (**WAPs**). The NWI states that the purpose of water plans is to assist governments and the community to determine water management and allocation decisions to meet productive, environmental and social objectives.[36]

The NWI commits signatories to ensuring that the consumptive pool of a specified water resource will be "determined by the relevant water plan".[37] The "consumptive pool" is in fact defined in the NWI as the "amount of water resource that can be made available for consumptive use in a given water system under the rules of the relevant water plan".[38]

[36] Intergovernmental Agreement on a National Water Initiative, [36], available here: https://www.dcceew.gov.au/sites/default/files/sitecollectiondocuments/water/Intergovernmental-Agreement-on-a-national-water-initiative.pdf
[37] Ibid, [28].
[38] Ibid, p 29.

Unfortunately, the Draft WSF Policy allows for the determination of consumptive pools *without* a NWI compliant (or indeed any form of) water plan in place.

The Draft WSF Policy does not explain the actual process by which the consumptive pool will be determined, other than that "available scientific research establishes the maximum volume of water that may be extracted…". It appears then that the consumptive pool may be set by bureaucrats within the Department having regard to "scientific research". The consumptive pool ought to be determined through NWI compliant statutory water plans that are transparent, subject to regular independent review and public consultation, apply the best available scientific knowledge and socioeconomic analysis, and promote the concept of ecologically sustainable development.

The NWI sets out water planning processes that should be followed when preparing water plans, and which therefore should be prerequisite steps to the determination of consumptive pools. The failure of the Draft WSF Policy to adhere to these water planning processes is set out in the table below.

Determination of the "consumptive pool"		
(NWI water planning processes[39])	**Through an NWI Compliant Statutory Water Plan**	**Through the Draft WSF Policy**
"Consultation with stakeholders including those within or downstream of the plan area"	✓	✗
"The application of the best available scientific knowledge and, consistent with the level of knowledge and resource use, socio-economic analysis"	✓	✗
"Adequate opportunity for consumptive use, environmental, cultural and other public benefit issues to be identified and considered in an open and transparent way"	✓	✗
"Reference to broader regional natural resource management planning processes"	✓	✗

Lack of transparency

EDO supports regulatory frameworks that are based on the best available science. However, the Draft WSF Policy's approach is problematic because no detail is provided on *how* "science" will be used to determine the consumptive pool.

One of the key lessons from the MDB is that transparency in decision making is paramount to ensuring the successful implementation of the law. The Basin Plan has been hindered by a lack of

[39] Ibid, Schedule E.

transparency regarding the science it is based upon.[40] The South Australian Royal Commission into the Murray Darling Basin Plan (**Royal Commission**) found that in setting the Basin-wide limits on extraction, the Murray Darling Basin Authority "failed to act on the best available scientific knowledge".[41] This was described as "unlawful" and "indefensible".[42] It occurred despite an explicit statutory provision in the Commonwealth Water Act requiring the use of the "best available science".

The Royal Commission observed that:

> "best available scientific knowledge is neither secret nor classified. It is available to the scientific community, and the broader public. It involves processes and actions that represent science – that is, that are capable of being reviewed, checked and replicated."[43]

The Royal Commission found that by keeping its scientific inquiries private, the Murray Darling Basin Authority had failed to make itself accountable to the public and the wider community.[44]

In relation to the "scientific information" to be used to set extraction limits, the Draft WSF Policy does not provide any detail on:

- The process for the development of this science. For example, will it be prepared internally by the Department, by consultants or by third parties?
- The extent to which any science relied upon will be subject to independent peer review.
- Whether the science relied upon will be made publicly available.
- The process for determining limits where the body of science is uncertain or there is disagreement among experts.

The Draft WSF Policy fails to include scaffolding that is critical to ensure transparency, independent scrutiny, consistency and public confidence in allocation decisions. This risks perverse economic, social and environmental outcomes.

Science itself cannot make decisions

Although scientific information is critical, the reliance of the Draft WSF Policy on "scientific research" belies the important role of value judgments when making water allocation decisions - about competing social, economic and environmental issues.[45]

Scientists who engaged directly with government to inform water policy and management in the Murray Darling Basin have acknowledged that "policy development is a complex product of compromise, trade-offs, weighing of scientific evidence, political imperatives, timing, individual agendas, and socio-economic factors.[46]

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[40] Murray Darling Basin Royal Commission Report, pp: 22-23, 69-70, 150-152, 213-215 & 691-692.
[41] Ibid, p 54.
[42] Ibid, p 54.
[43] Ibid, p 53.
[44] Ibid, p 710.
[45] This issue has been raised specifically in relation to water management in Australia. See for example: Ross M Thompson et al., "Principles for scientists working at the river science-policy interface", *River Research and Applications* (2022) 38, 810-831, https://doi.org/10.1002/rra.3951; Matthew J. Colloff et al., "Scientific integrity, public policy and water governance in the Murray-Darling Basin, Australia", *Australasian Journal of Water Resources* (2021), 25 (2), 121-140, https://doi.org/10.1080/13241583.2021.1917097.
[46] Ross M Thompson et al, (n 45), p 828.

Addressing these competing interests in an open and transparent way is the very purpose of statutory water plans. The NWI explains:

> "recognising that setting the trade-offs between competing outcomes for water systems will involve judgments informed by best available science, socio-economic analysis and community input, statutory water plans will be prepared for surface water and groundwater management units in which entitlements are issued."[47]

In other words, determining the available consumptive pool cannot be determined solely by reference to "science". Failing to acknowledge and scaffold the other relevant factors in the decision-making process creates the risk that value judgments will be made behind closed doors where they are shielded from community input and criticism. This could undermine public confidence and substantive outcomes.

Scientists have recently raised concerns that the "misrepresentation of science in public policy [is] increasing" and noted that "Australian ecologists and conservation scientists have experienced regular suppression of their research findings and exclusion of scientific evidence from planning and policy decisions."[48] This does not necessarily occur by way of intentional malfeasance by either scientists or policy-makers, but can be a subtle process driven by funding concerns and a desire not to challenge existing policy settings.[49]

These issues can be mitigated if policies promote scientific integrity, including: transparency, declarations of conflicts of interest, open access to models, results and data and best-practice standards for peer-review.[50] Unfortunately, the Draft WSF Policy is silent on all of these points.

Self-assessment is a flawed process

The Draft Interference Guideline relies on applicants undertaking a self-assessment to determine whether they are required to apply for a permit to interfere with a waterway under the Act. The Draft guideline requires a permit application where there is a "material change" to a waterway.[51] However, the extent to which certain works may, for example, impact the flow of a river will often require hydrological expertise. The Guideline is unclear as to when a prospective applicant ought to engage expert advice to determine the relevant impacts to allow them to undertake the self-assessment process. This approach risks the rapid expansion of smaller structures being built by applicants who may incorrectly conclude that the threshold for a permit is not required. Further, while such structures may each have a minimal impact, their cumulative effect may lead to significant volumes of water being extracted without the Department's knowledge. Such unrecorded extractions may lead to total water take exceeding the determined consumptive pool. The Draft Guideline does not account for cumulative impacts.

Further, the Guideline provides no indication as to how the Government intends to ensure that applicants are correctly conducting self-assessments.

There is a very real risk that relying on the self-assessment process will lead to a dearth in accurate information regarding the nature and number of structures potentially diverting water from

[47] NWI, [36].
[48] Matthew J. Colloff et al, (n 45), pp 122-123.
[49] Ibid, p 135.
[50] Ibid, p 135.
[51] The concept of "material change" is found in the definition of "interfere with a waterway" as defined in section 4 of the Water.

waterways. As detailed above, lack of relevant information is one of the major impediments to the effective regulation of FPH in the MDB.

Where an applicant determines that they are required to obtain a permit, the Guideline gives very little guidance on what information must be provided with their application. It states that:

> "the level of information provided in an application should be commensurate to the scale and nature of the proposal. The self-assessment tool (Attachment A) is intended to assist applicants in determining whether an application has low, medium or high information requirements."

However, the Guideline does not provide any detail on what "low, medium or high information requirements" actually include. While the Guideline does refer to "maps, construction drawings, and an activity timetable for construction and an ongoing operation or maintenance of an interference", it is not clear if this information is always required, or if it relates to "low, medium or high information requirements".

Finally, the self-assessment tool itself is unclear. It refers to differing impacts to the "shape", "bed & banks" and "flow" of waterways. However, if for example, the impact to the "shape" of the river is determined as "high", but the impact to the "flow" as "low", it is unclear what the overall impact rating is.

Conclusion

With significant expansion of the cotton industry expected across the NT over the coming years, it is vital that an appropriate regulatory framework is in place to effectively manage the sustainable extraction of water resources. The NWI provides a useful blueprint for implementing such regulatory regimes and establishes that they ought to be underpinned by statutory water plans. Determining the consumptive pool of water available for extractive uses in a particular area is a critical component of water management. It should be given effect through a statutory water plan.

The approach for determining the consumptive pool for wet season flows in the Top End of the NT set out in the Draft WSF Policy is inconsistent with the NWI and best practice. It is likely to lead to increased levels of water extraction, including by way of FPH. This will occur in an opaque manner that will likely undermine public confidence and may lead to perverse social, economic and environmental outcomes that will, in turn, be very difficult to reverse.

The Draft Interference Guideline's reliance on self-assessment processes is likely to compromise the accuracy of government data relating to water take in the NT. This will further complicate the effective management of water resources and may lead to breaches and excessive water take without regulatory oversight.

The opportunity to comment on the Draft Policies is available on the Have Your Say webpage until **9 January 2023**.

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