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Submission to Review of the *Water Sharing Plan for the Border Rivers Unregulated River Water Sources 2012*

The Inland Rivers Network (IRN) is a coalition of environment groups and individuals concerned about the degradation of the rivers, wetlands and ground waters of the Murray-Darling Basin. It has been advocating for the conservation of rivers, wetlands and groundwater in the Murray-Darling Basin since 1991. Member groups include the Australian Conservation Foundation; the Nature Conservation Council of NSW; the National Parks Association of NSW; Friends of the Earth; Central West Environment Council; and Healthy Rivers Dubbo.

Introduction

IRN welcomes the opportunity to participate in the Natural Resources Commission (NRC) review of the *Water Sharing Plan for the NSW Border Rivers Unregulated River Water Sources 2012* (the WSP). IRN notes that the WSP has been amended several times since 2012, notably in 2020. Unless otherwise stated, references below to clauses or schedules are to the current version.

The 2017-2020 drought demonstrated the importance of water not only to the human residents but also to the ecosystems. Most of this region's towns, such as Tenterfield, and those downstream, such as Collarenebri, were critically short of water in 2019, as were the rural

landholders and water-dependent businesses. Examples of the impacts of lack of water on ecosystems in the Border Rivers include the death of vast numbers of River Oak trees and of large Murray Cod that had survived previous droughts. Careful management of water to enable recovery of ecosystems is now equally critical. Subsequent stream flows have enabled sufficient recovery of surviving fish that there are now some juvenile fish but their populations and other components of the ecosystems stand little chance of recovery to a similar level of resilience if we can't improve management of available water before and during the next drought.

IRN recognises that, along with similar water sources in Queensland, the unregulated creeks and rivers in the NSW part of the Border Rivers area are the sources of water for the regulated rivers and alluvial water aquifers which could not otherwise be important water sources for ecosystems and people.

They are also important contributors of water and suspended or dissolved organic and chemical matter to all the ecosystems, riparian and floodplain lands, alluvial groundwater and people downstream including along the Queensland side of the Dumaresq and Macintyre Rivers and particularly along the full course of the Barwon River, Darling-Baaka River and to the Lower Murray River and estuary.

Response to Review Questions

1. To what extent do you feel the plan has contributed to environmental outcomes?

A. <u>Performance of the plan in relation to environmental outcomes and objectives</u>

The 2019 audit of this plan's implementation[1] found that requirements to measure the success of implementing the plan in reaching the plan's original objectives had not been put into effect.

This failure to monitor the aspects of the environment likely to be affected by extraction from or management of these rivers, seriously limits the knowledge required to improve river management.

Fortunately, some studies are providing some information relevant to the environmental objectives. We suggest that NRC contacts NSW Fisheries[2] regarding the surveys they have undertaken in several of this WSP's water sources before and since the most recent drought. Despite mass fish deaths in many locations as pools dried out, these surveys have revealed that some populations of endangered fish species, as well as more common species, did survive the

[1] Alluvium and Vista Advisory (2019). Audit of the Water Sharing Plan for the NSW Border Rivers Unregulated and Alluvial Water Sources 2012. Report 5 by Alluvium Consulting and Vista Advisory for NSW Dept of Planning Industry and Environment.

[2] Manager of the relevant section is Cameron.Westaway@dpi.nsw.gov.au

drought and have started to reproduce. Turtles were also surveyed in several streams by consultant Bruce Chessman.

A survey by Mole River Protection Alliance[3] in one of the Mole River's large deep pools that did not dry out revealed 7 native fish species, 3 turtle species and Rakali plus 11 frog species nearby, including the Tusked Frog. Mole River is the first location west of the Great Dividing Range where Tusked Frogs are known to still occur – this is an endangered population of this river-dependent species. Other rare or threatened species have been found along Mole River's banks including Spotted-tailed Quoll and Northern Brown Bandicoot. The presence of water to drink and the higher moisture level in a range of deep-rooted plants growing in riparian areas is as essential to many terrestrial species struggling to survive through extreme droughts as the water is for fish. Another Border Rivers example of this is koalas surviving near creeks such as Frasers Ck at Nullamanna.

Presence after the drought of aquatic and other water-dependent species may be primarily attributable to the evolved resilience of the species and presence before the drought of healthy individuals and suitable habitats.

However, survival was enabled by the existence of rules governing the use of water, including the WSP, combined with the willingness of most landowners to fully or substantially comply. This was particularly important to individual survivors dependent on the continuous presence of water. The scarcity and value of water in late 2019 was such that every pool, however deep, could have been pumped dry for use on site or sale to others. Most essential was the willingness of people who could see a pool of water to leave that water for fish, for whatever else they valued or to do what they felt was right. The existence and public knowledge of the WSP's constraints on pumping from pools was an important element of that willingness.

The big question now is what will survive in future following each additional decade of global warming and local climate change.

We understand that there were a high number of breaches of licence conditions and unlicensed extraction in some locations during the drought (e.g. Tenterfield Creek where at least one large pool was allegedly pumped dry). Some breaches apparently resulted in warning notices being issued by NRAR. The WSP's objectives are unlikely to be met without adequate, effective and ongoing enforcement, combined with encouragement for compliance. NRC should consider how to promote willingness of licence holders in rural communities to leave water for the environment and for people downstream.

Large numbers of fingerlings of Purple-Spotted Gudgeon reared from fish rescued from drying pools have recently been released back into Tenterfield Creek, a stream where local people

[3] IRN can provide more details of the survey

have worked to restore some habitat for this endangered species. Such costly artificial population support should not be necessary. Whether or not the population can be self-sustaining will depend on the adequacy of the WSP, its implementation and compliance.

It is IRN's view that the provisions of the WSP did not provide strong enough protection of pools and low flows to achieve necessary environmental. Most watercourses have few if any pools as deep as that surveyed in Mole River. Some of the pools that dried out, leaving large numbers of fish dead, were either downstream of or the site of pumps legally used when a pool was below full capacity or the moment it started to overflow after the infrequent inflows. The pools could not all be refilled by the remaining inflows so the high evaporation rates took a greater toll than would have been the case where more flow was required to pass. The drought in this area did not end with the first good flows in 2020. Rivers dried up again so pumping of pools and low flows would have had some further impact on species trying to move from refuges to other recovering habitats and on success of initial breeding efforts.

The regulatory regime and WSP also failed to include floodplain harvesting. The objectives cannot be achieved without control of when, where and how much floodplain harvesting occurs. Environmental outcomes from this plan are needed on the floodplain of the lower Macintyre River, Whalan Creek and Croppa Creek and along the Barwon and Darling-Barka Rivers. We suspect that the environment of some of the watercourses through the floodplain was not satisfactorily protected by the WSP provisions regarding pumping of both low and high flows (e.g. from Boomi River) and it is clear that the environment of the Barwon River suffered terribly from lack of inflows.

B. <u>Specific provisions to protect pools</u>

All access licences enabling pumping from in-river and off-river pools should prohibit pumping below the full capacity of the pool. Clause 44 requires this in relation to most licences, subject to exemptions. Schedule 2 exempts and thereby privileges 19 licence holders and should be deleted.

Protection of pools is essential to protect environmental values at times of no flow including plants and animals that need to either survive in water or need time to complete phases of their life cycle that enable them to survive in shrinking pools, mud or dry soil. Many species may be unable to respond effectively to artificially rapid drawdown of pools. Pumping after flow ceases reduces the amount of aquatic habitat and time available for these processes, and increases the risks to aquatic species, the amount of water required to refill a pool and, in the case of in-river pools, enable recommencement of flow to people and ecosystems downstream.

While water that is not pumped out may evaporate, evaporation is an essential use of water, not a loss: evaporation is essential to cool the water and minimise the risk that it will be too hot for plants and animals to survive. As global warming increases temperatures and evaporation, notably during heat waves, and the severity and/or frequency of droughts, the chances of

naturally diverse ecosystems in the rivers and floodplains surviving climate change depend on the volume of water in pools being maintained as high as possible for as long as possible.

No aquifer interference activities that involve drawing down of pools in periods of no or low river flow should be permitted. Mining and mining exploration are among the aquifer interference activities that clause 44 (1) relates to. Mining should not be permitted to interfere with the flow of rivers or be exempt from the conditions on other licences intended to protect water sources at times of high need such as low or no flow. This fails to protect PEW.

C. In-river dams and dam pools

The Commission should review licensed in-river dam pools and the conditions and exemptions that apply to each. The WSP does not specify what those conditions are. The conditions should be listed in the WSP, not kept secret, because the water being taken is a publicly owned resource; conditions should be seen to be fair and the public should be able to assist in identifying any non-compliance particularly in relation to dams across reserved riverbeds. The extent to which these dams reduce achievement of each targeted environmental object of the WSP should be assessed and recommendations made in relation to reducing impacts. Any social and economic benefits or disbenefits to the wider community of the structure and its use should also be considered, and recommendations made to reduce impacts.

D. Inadequate Protection of Low Flows and brief flow events

Low flows are essential to longitudinal connectivity and for many environmental benefits. While those licences listed in Schedule 1A have specific conditions to protect low flows, enabling the sharing of water downstream, many other licensees are restricted only by a requirement to not pump when there is no visible flow. All low flows may be pumped out if within the capacity of their pump. We presume that the conditions in Schedule 1A were set after discussions with local people and after finding or creating suitable gauging locations. While combining this approach with consideration of environmental needs may be best practice, it appears that DPIE staff may not have time to take this approach to protecting low flows throughout this and other regions. That is not an adequate reason for failing to protect low flows.

44(12) is a special rule applying only to Tenterfield Creek water source licences: that taking of water after flow ceases must not commence until there has been visible flow for a period of 24 hours at the extraction site. This rule should have the effect of either enabling a short flow of water through the creek after periods of no flow (natural or due to upstream extraction) or at least enabling some pools downstream from extraction sites to be filled and increasing the chance that the next flow event will get further downstream to benefit both ecosystems and downstream access licence holders. This subclause will only have effect immediately after periods of no flow whereas height-based low flow protection rules, such as those in Schedule 1A, provide protection whenever there is flow. However, it can protect short ‘freshes’ of

whatever height or just the first day of a naturally longer flow event during droughts. The subclause was added to this WSP in 2016 with other amendments when the Tenterfield Creek WSP was repealed. NRC could check the history of this condition and whether it or a similar condition applies in any other parts of NSW.

NRC should consult with licensees in the Tenterfield Creek area and anyone who has knowledge of the creek's ecosystem[4] to learn how the rule has worked for extractive users and whether it appears to have maintained or assisted recovery of the ecosystem in this heavily used creek. A few fish of threatened species were found after the horrific 2019 drought.

A 24-hour or similar rule that protects all flows for a short time after flow recommences could easily be applied to many, perhaps all, other unregulated streams. This could enable great improvements in the ability of fish and aquatic ecosystems to survive droughts and hot dry summers in more locations – not just in unusually deep or sheltered pools. NRC could recommend that

- this rule be applied from the start of the next WSP to either all licences or all that are not listed in Schedule 1A
- compliance with the new rule, its hydrological effects and effects on targeted objectives be monitored
- that DPIE identify licence locations where it will be useful and practical to protect low flows using specific flow heights by periodic addition of the licences to Schedule 1A, and consider whether or not to exempt licensees getting new low-flow rules from the 24 hour rule.

E. <u>Inadequate means of meeting limits and downstream needs</u>

The WSP contains theoretical limits on total extraction. There is a total average extractable volume and shares assigned to each water source, and a process by which exceedance of the Long-term Average Annual Extraction Limit (LTAAEL) is to be prevented. As note in 4 below, this process has not been implemented.

Implementation of limits on total extraction is essential for dam in-flows, for people and ecosystems downstream and for some requirements of the Murray Darling Basin Plan. Management of the spatial distribution and timing as well as volume of water extraction from water sources and flow event are equally important. Indigenous species, ecosystems and the shapes of flow channels and habitat structure are all adapted to natural flow regimes, responding to some triggers or aspects of flow regimes. The volumes of water extracted by existing unregulated source access licences under the WSP are small compared to floodplain harvesting but part of the cumulative picture. It is the high volumes taken from the floodplain that has most impact on the characteristics of the flow regime, notably of the Barwon River.

[4] Government agencies, Granite Borders Landcare or Tenterfield's Ozfish chapter may be of assistance

The plan lacks sufficient conditions to maximise, when naturally possibly, lateral connectivity of watercourses with their floodplain in the Macintyre - Whalan Creek - Croppa Creek area. Achieving this would also enable increased longitudinal connectivity. The important wetlands that have been adversely affected by reduced connectivity include Morella Watercourse and Boobera Lagoon. The plan needs conditions to ensure that flood-dependent ecosystems, including those identified as ecological assets in the Border Rivers FloodPlain Management Plan, get sufficient water at the necessary frequency to enable recruitment and sustain them.

This plan lacks adequate 'end of system' targets to ensure that water is not taken at times when it is needed for higher priority environmental and basic rights needs in the Barwon-Darling River system. The clauses limiting take are unrelated to the times of need downstream. When granted, many access licences for floodplain harvesting in the Border Rivers area, perhaps all[5], will come under this plan and/or its replacement. NRC should recommend ways to ensure environmental, cultural, basic rights and economic needs of the Barwon-Darling River can be met by flows that would naturally reach the Barwon from any part of the Border Rivers area including via the floodplain and effluents south of Mungindi.

This plan review is an opportunity to reduce the share of water taken, notably by floodplain harvesting, to sustainable levels. The targets now committed[6] to in relation to Border Rivers regulated flow users will not meet all needs in the Barwon-Darling. Those targets and history of use should not be the only constraints on the volume taken by harvesting from the unregulated floodplain. Water harvesting has contributed enormously, along with other diversions to very poor ecological health, declining social wellbeing and declining prosperity in the Barwon Darling, both by reduction of large flow events and by reduction of moderate events by runoff harvesting. After several decades of greatly reduced inflow and droughts, the Barwon-Darling needs not just a first flush but many substantial flow events to maximise ecological and social recovery and enable more economic benefits from presence of flowing water. The needs of the environment should be put first in accordance with legislated priorities.

2. To what extent do you feel the plan has contributed to social outcomes?

The WSP has not contributed adequately to positive social outcomes.

An initial lack or paucity of enforcement contributed to limited interest in complying in some communities. NRAR's approach during the recent drought may or may not have improved this. Illegal extraction limited achievement of social outcomes, being unfair to other complying extractive users and to people who value rivers for the water that is in them (e.g. as aquatic habitat, for recreation or for spiritual renewal) and as deliverers of water from source to drier

[5] The water is not in a regulated river when harvested so harvesting from the floodplain close to the Macintyre River may come under this plan along with harvesting closer to Whalan Creek, Croppa Creek, Morella Watercourse and Boomi River.

[6] As specified in and amended in accordance with the Water Sharing Plan for the NSW Border Rivers Regulated River 2021

locations further west. Just as it saddens millions of people to hear that the Darling is drying up yet again, it pleases people to hear when water from the tributaries has arrived. There are people in the Border Rivers who like knowing that some of the water that passed their properties has gone to Menindee. The lack of metering requirements, lack of meters, lack of assessment of annual use relative to LTAAE Limits means that this aspect of the WSP did not contribute in any way to social outcomes in the Border Rivers nor downstream. People who know that the limit set for the regulated river was exceeded want to know if the unregulated limit was exceeded or if the share taken was fair or at least in accord with the Basin Plan.

The provisions of the WSP that do not adequately protect pools and low flows did not contribute adequately to

- access to water for basic rights
- water dependent cultural, heritage and recreational uses including recreational fishing
- and possibly water quality. The Commission should seek information about any water quality problems experienced in this WSP's water sources, such as salinity during or following the drought around Ashford and whether extraction might have limited dilution of saline runoff from areas affected by dryland salinity.

There have been no Cultural Water access licences granted in this water source, therefore no compliance with Part 7 cl. 40. There is still no outcome nor improvements that meet Aboriginal needs. There has been no identification of culturally significant values in the water source area, not even Boobera Lagoon, one of the most important Aboriginal sites in southeast Australia.

IRN was concerned when noticing that there is a licence which allows Boobera Lagoon to be pumped down below full capacity. It is located in the Travelling Stock and Camping Reserve. We have therefore commenced inquiries to find out whether it is actively used, if so by whom, and whether the traditional owners with responsibility for the lagoon wish to see changes to the licence or the share of the Extraction Management Unit's (EMU) LTAAEL e.g. in ownership, conditions or location.

3. To what extent do you feel the plan has contributed to economic outcomes?

The plan has a bias towards the aspects of economic objectives that relate to the irrigation industry in the plan area: a bias away from current and potential aspects of the economy that benefit more from presence of flows or healthy ecosystems such as tourism (e.g. because low flows are not well protected).

It is also biased away from the Barwon and Darling-Baaka economy because it does not include means of implementing LTAAE Limits or Sustainable Diversion Limits such as metering requirements.

The main thing that benefitted the Barwon-Darling economy was ceasing to issue more extraction licences in this and the regulated water sources long before the WSPs commenced. The existence of regulated rivers and floodplain harvesting works between the tributary water sources in this plan and

the Barwon River limits the potential to meet economic objectives in the Barwon or Darling-Baaka areas. If this WSP limited extraction at times and in a way that resulted in any extra flow reaching the Dumaresq or lower Macintyre, that water could have been used to meet any current orders in lieu of dam water – no extra would have gone to the Barwon. That would have benefitted those irrigators and whatever parts of the economy their income went to (e.g. in Goondiwindi or Sydney).

The regulated licensees exceeded their Border Rivers Regulated LTAAEL. If extraction by unregulated tributary licensees happened to be less than their LTAAEL it just helped the regulated users exceed theirs. They might be brought back within their limit. It is only after a delay of several years that the Barwon gets compensatory extra flows, not necessarily when they are most needed. NRC could consider whether there is a way that any underuse of LTAAEL in the tributary EMU can be passed on to the Barwon sooner, assuming that this LTAAEL is actually calculated.

4. To what extent do you feel the plan has contributed to meeting its objectives?

The 2019 audit report found that total annual extraction had not been calculated, there had been no assessment of whether or not long-term limits on extraction had been exceeded, and that when clauses requiring this assessment and action to manage any non-compliance are not implemented, "the likelihood of not meeting the intended objectives of the plan is very high".

The reason for this failure was the great difficulty estimating consumption when licences do not require meters. The maxim "No Meter, No Pump" should become a rule in the plan, banning all pumping until a meter is fitted to a pump, regardless of the diameter of the pump intake. Meters have been used by some irrigators elsewhere for over 30 years. There should be no great difficulty buying suitable meters of the size required so long as a little warning is provided. Owners can learn from their meters whether changes in their practices improve the water-efficiency of their operations and might thereby recover the meter cost and sometimes leave a little more water for the environment.

Many of our responses to questions above are indicative of our view that the WSP only made a limited contribution towards meeting its objectives. The provisions of the WSP did not provide strong enough protection of pools and low flows to achieve the environmental objectives of the WSP. The objectives cannot be achieved without control of floodplain harvesting that includes alteration or removal of some structures, substantial reduction of the volumes extracted and more constraint on the timing of harvesting determined in relation to the needs of local ecosystems and the social and environmental needs downstream. The objectives in the 2020 amended WSP are much improved. Additional ecological communities dependent on water in or from the Border Rivers should be listed in the targeted objectives of the plan and monitored to assess effectiveness of the plan. The additions should include open forests and woodlands dominated by Carbeen[7], River Oak, Weeping Bottlebrush and/or Black Teatree. Listing and monitoring should not be restricted to endangered ecological communities because it is

[7] an endangered community that occurs in many small pockets in the Macintyre floodplain but is not shown on vegetation mapping

important to maintain and enhance all riparian communities, providing shade, shelter, bank protection and reducing evaporation as well as providing habitats. The River Oak communities occur along a large number of unregulated streams in the eastern half of the area and showed during the drought that their continued existence should not be taken for granted – a significant proportion of River Oaks trees along streams such as Mole River died.

5. What changes do you feel are needed to the water sharing plan to improve outcomes?

- Ban all pumping until a meter is fitted to a pump and unless it is functioning, regardless of the diameter of the pump intake. Require meter readings to be recorded, maintained and annual reporting.
- Change clause 44 (1) to prohibit aquifer interference activities that involve drawing down of pools in periods of no or low river flow.
- Delete Schedule 2. No-one should be permitted to pump from in-river or off-river pools when they are below full capacity except under clause 44 (10) (a), (b) or (e).
- Conditions applying to each in-river dam should limit adverse effects of the dam on achievement of environmental objectives and be listed in the WSP
- extend protection of low flows to more licences and, at least as an expedient interim measure, add a requirement for licences that lack specific low flow protection to not commence pumping after a cease-to-flow period until there has been visible flow for 24 hours
- List in the targeted objectives all ecological communities that are dependent on river flows, including those dominated by River Oak, Carbeen, Black Tea-tree and Weeping Bottlebrush
- Add 'end of unregulated system' targets particularly in relation to outflows from the Whalan Creek -Croppa Ck – Macintyre floodplain and the flow regime required for the Barwon River
- Add conditions to improve lateral and longitudinal connectivity of watercourses through the floodplain
- prohibit any new floodplain harvesting e.g. via moving of licences to new locations.
- Reduce the amount of water that may be used for floodplain harvesting and limit the times when it may be taken so that all environmental needs along the Barwon are given priority and can be properly met, and there is a fairer contribution from this water source to the Darling-Barka including Lower Darling.

Yours Sincerely
Brian Stevens
Secretary