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Submission to Review of the *Water Sharing Plan for the North Western Unregulated and Fractured Rock Sources 2011*

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 North Western Unregulated and Fractured Rock Water Sources 2011* (the WSP).

This area is outside the Murray-Darling Basin and has not been included in the development of Water Resource Plans.

An audit of the WSP conducted in 2019 found that following provisions were not being given effect to:

- Part 2 Vision, objectives, strategies and performance indicators, cl. 10 Performance indicators used to measure the success of the WSP strategies to reach the objectives of the WSP
- Part 6 Limits to the availability of water, cl. 28 Compliance with the long-term average annual extraction limit for the

- Part 11 mandatory conditions cl 60 – cl 63

And that a number of provisions were only partially given effect to.¹

A range of commitments in the plan have not been completed. These include identifying additional high priority Groundwater Dependent Ecosystems (GDEs) and water dependent significant cultural assets, allocating cultural water and conducting recharge studies. The lack of commitment to researching this information has affected the achievement of key objectives and performance indicators in the WSP.

IRN does not consider that the WSP provided a balance for environmental, social and economic benefit. The lack of compliance with WSP commitments compounds this regulatory failure.

Context to the water plan's area

North Western NSW is an arid rangelands region with a hot, dry climate, low rainfall and intermittent flood events that provide environmental triggers, native species breeding events and groundwater recharge.

The ephemeral creeks, lakes and water bodies in the region provide important environmental and cultural values, as do springs and areas associated with possible karst or fossil karst systems.

The region includes significant protected areas in Sturt National Park, Narriearra Caryapundy Swamp National Park and Mutawintji National Park.

The region contains hydrological catchments for Cooper Creek, Bulloo River and Lake Frome. These are significant environmental assets that have been classified by BirdLife International as Important Bird Areas.

Most of the small streams within the NSW portion of the Lake Frome catchment terminate in shallow lakes and floodouts in the Strzelecki Desert, contributing no run-off into Lake Frome. The major creeks from south to north are Morphetts Creek, Teilta Creek, Floods Creek, Packsaddle Creek, Lake Wallace Creek, Yandaminta Creek and Cooney Creek. Streams north of Milparinka flow towards Lake Callabonna in South Australia, with the major ones being Yandama and Tilcha Creeks.

Lake Bancannia catchment features a number of ephemeral lakes with their own local drainage systems. The major ones are Yantara, Ulenia, Salt Lake, Yantara, Bullea, and Bancannia.

The Bulloo River begins in the Gowan Ranges north of Quilpie in Queensland. Its major tributaries are Blackwater, Winbin and Gumbo Gumbo Creeks. Just north of the NSW border the river enters Bulloo Lake and, during large events, spills south across the border to Caryapundy Swamp and the Bulloo Overflow. Local run-off to the overflow is carried by Berawinnia Creek from the east and Twelve Mile Creek from the west.

¹ Alluvium, October 2019. *Audit of the Water Sharing Plan for the North Western Unregulated and Fractured Rock Water Sources 2011*

Cooper Creek is formed by the junction of the Thompson and Barcoo Rivers 40 kilometres north of Windorah in Queensland. The major tributaries are the Barcoo, Thomson, Darr and Alice Rivers, and Lansborough, Towerhill and Torrens Creeks. The small NSW portion of the catchment drains north via Warri Warri Creek which flows into the Cooper near Noccundra in Queensland.

There has been little demand for groundwater within the Adelaide Fold Belt and the Kanmantoo Fold Belt in far western NSW primarily as the groundwater quality is poor with limited beneficial use potential.² Also, groundwater development across the Lachlan Fold Belt is relatively limited.³

There is limited hydrogeological information in Adelaide Fold Belt and the Kanmantoo Fold Belt due to poor water quality and low aquifer yields. The vast majority of bores are constructed to supply limited stock and domestic purposes in the arid environment. Due to the high evaporation and low rainfall, recharge events are limited to sporadic and very infrequent deluge rainfall events.⁴

The determined ecological value of vegetation GDEs in the Lachlan Fold Belt, Adelaide Fold Belt and Kanmantoo Fold Belt are mainly categorised as medium to very high.⁵ The riparian vegetation on ephemeral streams and vegetation associated with springs and karst systems are environmental areas of high value.

The geological categorisation of these groundwater sources is out of date. The Lachlan Fold Belt has been known as the Thompson Fold Belt for 30 years and the Kanmantoo Fold Belt is now known as the Delamerian Orogen. This is overlain by the Bancannia Trough which is younger than the fold belt and is in turn overlain in part by the Great Artesian Basin (GAB).

It is of interest if the Bancannia Trough area is included in this WSP or in the Shallow GAB WSP.

The relationship and connectivity between these fractured rock groundwater sources and the Shallow GAB and GAB needs to be further investigated.

Key issues with Water Sharing Plan (WSP)

1. Plan Limit

The long-term annual average extraction limits (LTAAEL) for the water sources in the WSP area are too high. There must be a reassessment of rainfall runoff and recharge estimates using new climate models. The lack of consistency across the water source area is considerable.

1.1 North Western Water Source:

The LTAAEL has been set at 2,807ML. Current rights & licences held in this water source are:

- Basic rights - 809 ML

² DPIE, 2019. *Draft NSW Murray-Darling Basin Fractured Rock Water Resource Plan*. Groundwater Resource Description

³ Ibid

⁴ Ibid

⁵ Ibid

- Native title rights - 0 ML
- Harvestable rights - n/a
- Unregulated access licences 30 ML

The lack of an estimate of take under harvestable rights is a major consideration for the assessment and compliance with LTAAEL. The background paper for this WSP has conflicting and incorrect information about the calculation of basic rights and the relationship with harvestable rights.⁶

The township of Tibooburra has a water supply from the Allpress Dam (an earth tank) close to the town and a secondary supply from another earth tank on Thompson Creek about 6-7 kms SW from the town. We assume that this water use has been estimated under the basic rights volume.

1.2 Kanmantoo Fold Belt North Western Groundwater Source:

The LTAAEL has been set at 27,930 ML. Current rights & licences held in this water source are:

- Basic rights - 2, 182 ML
- Native title rights - 0 ML
- Stock & domestic access licences 29 ML
- Aquifer access licences 19 unit shares

1.3 Adelaide Fold Belt North Western Groundwater Source:

The LTAAEL has been set at 30,381 ML. Current rights & licences held in this water source are:

- Basic rights - 2, 396 ML
- Native title rights - 0 ML
- Stock & domestic access licences 13 ML
- Aquifer access licences 16 unit shares

1.4 Lachlan Fold Belt North Western Groundwater Source:

The LTAAEL has been set at 0 ML. There are no rights & licences held in this water source.

The current Plan Limits leave a significant volume of unassigned water open for controlled allocation. Any increased water access will be reliant on highly variable rainfall events predicted to decrease due to climate change. Increased water access must be assessed for impacts on high value environmental and cultural areas.

Amendments under Cl 67 allow for the modification of LTAAEL as a result of recharge studies. This work is outstanding and needs to be conducted giving regard to new climate modelling for the region.

2. Controlled Allocations

There appears to be no reporting on controlled allocation of unassigned water being granted during the life of the WSP.

⁶ NSW Office of Water, 2011. *Water Sharing Plan for the North Western Unregulated and Fractured Rock Sources - Background document* p12

Cl 35, giving provision for controlled allocation, must include clear rules for the process including detailed assessment of impacts on groundwater sources and recharge, on flows to ephemeral lakes and streams, and on groundwater dependent environmental and cultural values.

The most likely reason for a controlled allocation in the North Western region would be for mining development.

Aquifer interference approvals have been adopted mainly to account for mining interception of groundwater water.

The exemption from the cease-to-pump rule for aquifer interference has major implications in regard to the impact of mining activities on ephemeral surface flows, lakes and pools, and aquifer recharge.

Cl 40 providing rules for access to surface water excludes *‘the taking of water under an access licence that nominates an aquifer interference approval and does not nominate a water supply work approval in the North Western Water Source.’*

Various WSP rules protect Cooper Creek, Bulloo and Lake Frome hydrological catchments, however, the exemption for aquifer interference approval does not protect these high value environmental areas.

The WSP allows for an amendment of this provision under Cl 68. IRN recommends that the exclusion be removed.

The issue of aquifer interference must also be resolved through a reassessment of the Plan Limits and stronger rules for controlled allocations.

3. Environmental assets

Schedule 4 – High priority GDEs - lists two springs, Tarrawingee and Corona Springs, and two karst systems, Mutawintji and Torrowangee.

The WSP note outlines that further investigation is underway and the Schedule will be amended. This has not occurred and needs to be updated.

All ephemeral lakes, water bodies and waterways should also be listed as high value or sensitive environmental areas. There is nothing listed under Schedule 4 as a sensitive environmental area other than the above listed GDEs.

Ephemeral lakes such as Bancannia Lake, Narriearra Caryapundy Swamp and ephemeral creeks in the Cooper Creek, Bulloo Overflow and Lake Frome catchments should be listed as high value environmental areas. Also Depot Glen near Milparinka that may be a permanent water body and has historic significance with Sturt’s exploration through the region.

The amendment provision at cl 68 allows for more additions to Schedule 4. This is an urgent matter for the North Western region.

4. Environmental protection

The rules in the WSP offer very poor protection of the environmental health of water sources in the region.

4.1 Surface water

Cl 40 (2) does not protect planned environmental water as specified under Cl 14 (2)(a) and Cl 15 (2) (a) (i). A cease-to-pump rule at no visible flow does not protect the physical presence of water in the North West unregulated water source.

Schedule 2 providing exemption from cease-to-pump rules for specific licences (yet to be identified in the WSP) must be removed.

The exclusion in Cl 40 (1) of water taken under an access licence that nominates an aquifer interference approval fails to protect planned environmental water from interception by mining activities.

IRN supports Cl 40 (3) that protects lakes, lagoons and natural pools from being drawn down below 100%.

There have been no Total Daily Extraction Limits or Individual Daily Extraction Limits implemented in this water source. A significant reduction of the LTAAEL is needed to protect the environmental and cultural values supported by ephemeral streams and water bodies in the region.

No estimation of harvestable rights have been included in the LTAAEL. In the Western Division of NSW 100% of rainfall runoff capture is available under harvestable rights.

The calculation of the volume of rainfall runoff captured under harvestable rights and interception through farm dams in the WSP area is critical to understanding the extent of extraction.

The management of in-river dams, as identified in Cl 40 (4), needs to be better understood and subject to compliance audits.

4.2 Ground water

Planned environmental water in two of the groundwater sources protects only 40% of long-term average annual rainfall recharge.

A small percentage of the Kanmantoo Fold Belt recharge is 100% protected in high environmental areas. However, these are not identified in the WSP.

100% of recharge is protected in the Lachlan Fold Belt portion of the region.

Under new climate modelling, the source of rainfall recharge is likely to diminish considerably. The assessment of long-term average annual rainfall recharge in these groundwater sources needs to be updated. Greater protection is needed in the WSP by lowering the LTAAEL.

Rules to protect sensitive environmental areas from bores are not consistent and can be overruled at the Minister's discretion. There are numerous exemptions to protective rules. The concept in Cl 49 (2) & (4) of 'no more than minimal drawdown' at the perimeter of a GDE is not protecting the asset and is impossible to regulate. The paucity of environmental assets listed under Schedule 4 also provides minimal protection across the region.

5. Cultural flows and values

There is no identification of groundwater dependent culturally significant sites in the WSP. This is an outstanding failure of the implementation of the Plan.

The rules in Cl 50 do not provided adequate protection to such sites and are inconsistent with the rules to protect sensitive environmental areas.

A specific purpose "Aboriginal cultural" access licence of 10 ML has been nominated under Cl 34 (3). This has not been allocated during the life of the WSP.

The volume available for cultural flows in this water source could be increased.

It is critical that improved consultation is conducted with Traditional Owner groups in the region including the Karenggappa, Maliangapa, Wiljakali and Barkindji people.

Response to Review Questions

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

The WSP has failed to meet its environmental objective to:

'protect, preserve, maintain and enhance the important river flow dependent and high priority groundwater dependent ecosystems of these water sources.'

Planned environmental water is not protected in the surface or groundwater sources. The number of exemptions to rules in the WSP further fail to protect planned environmental water.

Not all river flow dependent ecosystems and high priority GDEs have been identified. Schedule 4 needs to be updated.

The LTAAEL in all water sources except the Lachlan Fold Belt are too high and need to be reassessed.

Important environmental assets are under threat from controlled allocations and a significant increase in water extraction. The exclusion of aquifer interference approvals from cease-to-pump rules, further threatens sensitive areas.

The protection of the hydrological catchments for Cooper Creek, Bulloo River and Lake Frome has been recognised in various rules but needs to be consistent and should be extended. Protection of other areas such as Bancannia Lake catchment and Glen Depot should be included in rules.

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

The WSP has failed to identify significant Aboriginal cultural values and fails to adequately protect them.

The lack of allocation of cultural specific purpose licences is a key failure of the WSP process. Improved consultation with Aboriginal traditional owner groups is essential.

Basic rights and stock and domestic requirements have been well provided by the WSP.

The protection of high value environmental areas, while needing improvement, adds to the social and recreational opportunities in the region.

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

The arid nature of Far West NSW and poor quality of groundwater sources does not allow for major development of water dependent industries. Any growth in mining development must consider the fragile nature of the landscape and sensitive environmental areas.

Tourism is a key economic contributor to the region when widespread rainfall and flood waters trigger aquatic species & waterbird breeding & migration. The protection of the hydrological catchments for Cooper Creek, Bulloo River and Lake Frome need to be extended. Other important areas such as the National Parks in the region should also be considered.

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

As found in the Alluvium audit, the WSP has failed to meet its objectives including a contribution to the environmental and other public benefit outcomes identified under the Water Access Entitlements and Planning Framework in the *Intergovernmental Agreement on a National Water Initiative (2004)*

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

- Decrease the LTAAEL
- Reassess rainfall recharge using new climate modelling for NSW Far West
- Protect 100% of all long-term average annual rainfall recharge in groundwater sources
- Assess the volume of take in the WSP area through harvestable rights and farm dams
- Protect low flows in unregulated streams
- Remove Schedule 2
- Identify all sensitive environmental areas and update Schedule 4
- Identify all culturally significant areas through consultation with Traditional Owners
Allocate cultural flow special licences
- Include rules for controlled allocation of new licences
- Assess connectivity with GAB

Conclusion

New climate modelling predictions for the NSW Far West region must inform a more conservative approach to water sharing and limit of extractions in the WSP area.

The landscape is very fragile and all water-dependent environmental and cultural areas must be protected from any increase in water use, particularly through mining development.

IRN looks forward to recommendations from the NRC that will inform the making of a new WSP for the North Western Unregulated and Fractured Rock water sources.

Yours sincerely

A handwritten signature in black ink that reads "B. Smiles". The letters are cursive and slightly slanted to the right.

Bev Smiles
President