INLAND RIVERS NETWORK

[redacted]

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SUBMISSION

Draft NSW Murray-Darling Basin Fractured Rock Water Resource Plan

Introduction

The Inland Rivers Network (IRN) is a coalition of environment groups and individuals concerned about the degradation of the rivers, wetlands and groundwaters of the Murray-Darling Basin. It has been advocating for the conservation of rivers, wetlands and groundwater in the Murray-Darling Basin since 1991.

IRN appreciates the opportunity to comment on the draft NSW Murray-Darling Basin (MDB) Fractured Rock Water Resource Plan (draft WRP).

Background

IRN submitted substantial comments to the Status and Issues Paper on the NSW MDB Fractured Rock WRP released in 2017.

We raised the issue of the high level of unallocated water in this water source and the need to protect water availability near Groundwater Dependent Ecosystems (GDEs).

We also raised that the impacts of mining on groundwater levels and water quality is a major community concern.

The WRP area is highly complex containing eleven different resource units with different characteristics, use rates and risks.

The draft WRP identifies a number of areas of high risks for this groundwater source and high levels of poor water quality in the western areas. There is a lack of data on both these important planning issues.

There are a high number of priority groundwater dependent ecosystems (GDEs) supported by this groundwater source, as listed in Schedule 2 of the water sharing plan (WSP). We consider that this list is not exhaustive and should be added to with more rigorous on ground assessment of springs.

It is of great concern that there is currently no monitoring of groundwater dependent vegetation and condition and that none is proposed in the draft WRP.

IRN is also concerned that consultation has occurred with only six First Nations groups of the 29 First Nations groups with country in the WRP area. The draft WRP should not be on exhibition for comment with this significant lack of information.

The Sustainable Diversion Limit (SDL) and Long Term Average Annual Extraction Limit (LTAAEL) are far too high in some resource units of this groundwater source and have no relationship to the historic level of take or current entitlements.

IRN does not support the draft WRP and accompanying WSP because of the information gaps and failure to adequately protect the environmental assets and values supported by this groundwater source.

Groundwater Dependent Ecosystems (GDEs)

There are a significant number of high and very high value GDEs occur in the WRP area. These include wetlands listed under Ramsar and the Directory of Important Wetlands in Australia, karst, springs, endangered ecological communities, threatened species, Basin target vegetation, extensive riparian vegetation corridors and in some areas, base flows.

Ecological values include groundwater dependent woodland forests and wetlands including black box, lignum, river red gum, yellow box and coolibah and non woody wetlands.

Connectivity between groundwater sources and to surface water sources is an important aspect in many of the resource units of this extensive groundwater source.

The risk assessment outcomes for potential risks to GDEs associated with groundwater extraction causing drawdown were medium and high in the NSW MDB Fractured Rock WRP area.

Distance rules for water supply works approvals are the key management tool for protecting GDEs in groundwater sources.

The rules in the current WSP are:

To protect bores located near sensitive environmental areas:

No water supply works (bores) granted or amended within:

- 100 m of a high priority GDE in the case of a water supply work used solely to take water for to basic landholder rights
- 200 m of a high priority GDE in the case of a water supply work used for production and a distance of greater than 200 m if the bore is likely to cause drawdown at the perimeter of the GDE
- 500 m of a high priority karst GDE or escarpment
- 40 m from the top of the high bank of a river or stream

The proposed new rules are similar but remove the protection of '*greater than 200 m if the bore is likely to cause drawdown at the perimeter of the GDE*.'

This is a loss of protection for high priority GDEs in the groundwater source. There should be no permissible drawdown of GDEs.

New rule:
Cl 41
(1) A water supply work approval must not be granted or amended if, in the Minister's opinion, the water supply work is located within any of the following:
(a) 40 metres of the top of the high bank of a river.
(b) 500 metres of a high priority karst environment groundwater-dependent ecosystem shown on the High Priority Groundwater-Dependent Ecosystem Map,
(c) 200 metres of any other high priority groundwater-dependent ecosystem shown on the High Priority Groundwater-Dependent Ecosystem Map,
(d) 500 metres from the edge of an escarpment, where the location of the water supply work is to be above the escarpment.

The following proposed rules are not acceptable because they decrease the protection of high priority GDEs in the groundwater source.

Cl 41 (2) (d) the location of the water supply work at a lesser distance than that specified in subclause (1) would result in no more than minimal impact on any high priority groundwater-dependent ecosystem shown on the High Priority Groundwater-Dependent Ecosystem Map.

There should be no permissible impact of water extraction on high priority GDEs.

Cl 41 (3) The location restrictions in subclause (1) (b) do not apply to high priority groundwater-dependent ecosystems shown on the High Priority Groundwater-Dependent Ecosystem Map unless a high probability of groundwater dependence has been confirmed by the Department.

Karst systems are groundwater dependent and therefore this subclause is meaningless. It is also meaningless if this subclause should be referring to (1) (c) - being a poor cut and paste from other WSPs. High priority GDEs are on the map because they are groundwater dependent.

This clause is a direct threat to the protection of high priority GDEs.

Cl 43 Rules for Basic Rights bores set back remain unchanged.

However, IRN does not support the additional exemptions in sub clause 2:

(2) The location restrictions specified in subclause (1) do not apply to the granting or amending of a water supply work approval if the Minister is satisfied of any of the following:
(a) the water supply work is a replacement groundwater work,
(b) the location of the water supply work at a lesser distance than that specified in subclause (1) (c) would result in no more than minimal impact on any high priority groundwater-dependent ecosystem shown on the High Priority Groundwater-Dependent Ecosystem Map,
(c) the location of the water supply work at a lesser distance than that specified in subclause (1) (d) will result in no more than minimal impact on any groundwater-dependent culturally significant area.

These exemptions reduce the protection of high priority GDEs. There should be no permissible impact of water extraction on high priority GDEs.

IRN supports a state-wide set back distance of 200m from GDEs for basic landholder rights bores. This is because basic rights bores are unlicensed and unmetered and there are no restrictions on the number of basic rights bores.

Cl 44 Replacement water supply works should not be exempt from the above rules.

IRN does not support that the proposed set back rules in the draft WSP will provide protection for high priority GDEs in this groundwater source.

Cl 58 (3) provides provisions relating to access licences associated with EP&A Act development.

IRN does not support Cl 58 (3) (a), (b) or (c) giving provision for minimal harm. There should be no harm to priority GDEs, other water users, public health and safety or to groundwater dependent culturally significant areas.

These provisions should be consistent with Cl 58 (3) (d) with no adverse effect.

EP&A Act development should have no impacts on other groundwater uses.

Connectivity

The draft WRP states that '*Groundwater sources generally store large volumes of water, often accumulated over thousands of years, and this stored water is also replenished from time to time by rainfall, river and flood flows, and through flow from other groundwater sources*.'[1]

It also concludes that there is a low hydraulic connection with surface water in this groundwater source.

However, this is not the case in some resource units.

Groundwater from systems in higher elevation areas, having high rainfall, may discharge water as springs and provide some base flow along the upper catchments of

[1] Draft WRP 4.1.1 p 46

Macintyre, Gwydir, Namoi, Castlereagh, Macquarie, Lachlan, Murrumbidgee, and Murray River systems.

This surface water connectivity is critical in times of drought and must be protected. Springs providing base flows in the headwaters of major river systems must be identified and included in Schedule 2 of the WSP.

The Young Granite resource unit is considered to have capacity to interact and provide base flow to surface water in this area during high rainfall seasons. Improved knowledge is needed to ascertain whether the storage of water in this resource unit provides discharge and base flows for periods of time after high rainfall events. Slow seepage discharge after rainfall is an important source of base flow to river systems.

The buried portions of the regional fold belts, underlying porous or alluvial groundwater systems are considered to not have a significant connection with the overlying or contiguous groundwater systems.

If this is the case then any level of extraction is likely to be drawing down water that has been accumulated over thousands of years with only intermittent recharge.

The extraction of this ancient groundwater source must be managed with better knowledge of sources of recharge. Sources of recharge must be protected, particularly if the key source is intermittent flood flows.

The water table in the Adelaide Fold Belt, Kanmantoo Fold Belt and the broader Lachlan Fold Belt in the western regions with low elevation and low rainfall, is described as typically deep and not linked to surface water flow.

The western resource units have very high salinity levels. The management of water quality requires the protection of any intermittent freshwater recharge.

IRN is concerned that connectivity with surface waters and other groundwater sources for the NSW MDB Fractured Rock is poorly understood and not adequately monitored or protected.

The draft WRP does not adequately address this issue.

The issue of connectivity across state borders has not been addressed. The WRP refers to connectivity to the east outside the MDB but does not refer to interstate connectivity with South Australia, ACT or Queensland.

The WSP has provisions for interstate trade from and to this groundwater source. There appears to be no policy or statutory imperative for addressing the impacts of groundwater extraction in one state, on other uses across the border.

Recharge

If this groundwater source does not have significant hydrological connectivity to surface waters or adjacent groundwater sources and contains water accumulated over thousands of years, the protection of recharge is highly significant for long term sustainability.

As outlined above better knowledge of connectivity and recharge sources is important for the management of this groundwater resource and its assessed risks.

IRN notes that high risk from climate change reducing and groundwater availability has been identified in a number of resource units.

Protection of aquifer recharge is essential for the long term sustainability of the groundwater source. Recharge is important for maintaining water quality and quantity and the structural integrity of aquifer systems.

Flood flows providing intermittent freshwater recharge must be protected from floodplain harvesting operations. The importance of groundwater recharge from flood flows must be assessed during the process of determining floodplain harvesting licences and regulation.

IRN strongly opposes the proposed removal of the protection of recharge by changing the definition of planned environmental water as specified in current WSP.

Risk Assessment

The risk assessment for the draft WRP has identified a large number of high and medium risks to this groundwater source.

The assessed high risks include:

- to local drawdown in bores reducing groundwater access by consumptive users in the Lachlan Fold Belt, New England Fold Belt and Young Granite resource units
- of climate change reducing recharge and groundwater availability to consumptive users in the Lachlan Fold Belt (Murray), New England Fold Belt (Namoi,Gwydir) and Young Granite resource units
- of climate change reducing recharge and groundwater availability to GDEs and instream ecological values in the Young Granite resource units.

IRN considers that if risks of local drawdown and climate change to consumptive users is assessed as high, this risk is also likely to be high for GDEs and instream ecological values in many of the resource units.

We note that a significant number of medium risks have also been identified across most resource units for various risk types.

We do not accept that the risk of climate change impacts is low in any of the resource units. The impact of climate change on recharge and connectivity is already being felt in the NSW MDB with the current drought of record on top of the impacts of the Millenium Drought.

IRN notes that many risks are assessed qualitatively. This indicates major information gaps that need to be filled. We do not support that many of the qualified risks are Nil or Low.

We do not support that the risk of growth in mining reducing groundwater availability is Nil or Low. This assessment of mining interception is based on qualitative

information and the Bioregional Assessment Program for coal seam gas and large coal mining development.

Many of the resource units are impacted by mining gold, silver, lead and other types of minerals. The Cadia goldmine near Orange has had a significant impact on regional water sources, particularly in periods of record drought.

Ongoing new mining proposals likely to access water rights in this groundwater source include the McPhillamys gold mine proposal at Kings Plains between Bathurst and Blayney and the Bowdens Silver/Lead mine proposal at Lue near Mudgee.

As stated earlier in this submission IRN does not support the proposed provisions for EP&A Act development. These do not protect environmental assets and values, or other water users from being impacted by mining activity.

We do not consider that the draft WRP has adequately assessed the risks to environmental assets and values in the groundwater source or that the rules in the draft WSP will adequately manage the risks to those environmental assets and values.

Water Quality

We note that Water Quality Management Plan (WQMP) aims to provide a framework to protect, enhance and restore water quality that is fit for purpose for a range of outcomes that:

- Fulfil First Nation peoples spiritual, cultural, customary and economic values
- Protect and improve ecological processes and healthy aquatic ecosystems
- Provide essential and recreational amenities for rural communities
- Assist agriculture and industry to be productive and profitable

However, water quality information for the WRP area is limited and varies significantly across the resource units in this groundwater source. There is no dedicated program for groundwater quality monitoring within the WRP area.

It is inferred, based on the current use of the groundwater that generally the groundwater quality in the higher rainfall areas of the tablelands and along some rivers and streams, where active recharge occurs, is relatively fresh with salinity ranging from 200 EC to 2000 EC.

Groundwater salinity tends to increase westward. Salinity levels range from 2000 EC on central and southern western slopes to greater than 20,000 EC in the western areas around Broken Hill & Cobar.

Figure 6-1. Groundwater salinity in the NSW Murray Darling Basin Fractured Rock WRPA[2] shows a large area of the groundwater source with no water quality data.

IRN does not support that the strategies and associated water management actions and mechanisms, as outlined in Table 6-1[3] will adequately address the risks of poor water quality.

[2] Draft WRP p 73
[3] Ibid p 76

As outlined above, the provisions under Part 9 of the draft WSP do not adequately protect GDEs or instream ecological values. These provisions will not protect GDEs and environmental values from the medium risk of salinity impacts in the Lachlan Fold Belt, New England Fold Belt and Young Granite resource units.

The lack of data on water quality in this groundwater resource does not allow for the assessment outcome to identify low impact risk from salinity. This is particularly for the western Adelaide Fold Belt and Kanmantoo Fold Belt where salinity levels are very high.

IRN does not support that the proposed WQMP will meet its objectives.

LTAAEL/SDL and Access Rights

The draft WRP identifies that three resource units, Adelaide Fold Belt MDB, Lachlan Fold Belt MDB, and New England Fold Belt MDB have a current level of entitlement volume less than the LTAAEL/SDL. This is considered to be 'unassigned water.'

It is proposed to periodically have controlled allocation processes that offer opportunity to purchase additional water entitlements in these resource units.

IRN does not support this approach. The Lachlan and New England Fold Belt resource units have been assessed to have a variety of risks. These include high risk of climate change reducing recharge and groundwater availability and local drawdown reducing groundwater access, medium risk of poor water quality and impacts on GDEs and instream ecological values.

These risks would best be managed by not releasing any more water access in the resource units.

The Adelaide Fold Belt resource unit is in an area of highly saline water quality that should not be further accessed.

These issues indicate that the LTAAEL/SDL are too high and need to be reduced to the current level of access rights, as has occurred in other resource units.

The Kanmantoo Fold Belt, Liverpool Ranges and Warrumbungle Basalt resource units have water access rights higher than the LTAAEL/SDL. There is no clear provision for how this will be managed in the WSP.

Water Sharing Plan Objectives

IRN supports the broad environmental objective of the NSW MDB Fractured Rock Groundwater Sources WSP.

This is to protect the condition of the groundwater sources and their groundwater-dependent ecosystems over the term of the plan.

This support includes the targeted objective to protect the extent and condition of high priority groundwater-dependent ecosystems that rely on the groundwater sources. Also to protect the structural integrity of the aquifers.

We note that there is no targeted objective to improve salinity levels in the groundwater source. This should be included.

The performance measures need to include the maintenance of the structural integrity.

A targeted objective to contribute to the maintenance of the structural integrity of the aquifer and improved salinity levels should also be included in the economic, social and cultural objectives.

Proposed WSP Rules

1. Minimum distance rules

As stated above, IRN does not support the proposed minimum distance rules for water supply works.

These will not provide the required protection to GDEs and instream ecological values from risk, as proposed in the risk management strategies and WQMP.

2. Removal of protection of recharge

IRN does not support the proposed rule change for the protection of planned environmental water. The protection of recharge inflows to this groundwater source is critical for the reasons outlined above.

3. Time period for LTAAEL compliance

IRN does not support a time period of five years over which compliance with the LTAAEL is assessed in the NSW MDB Fractured Rock groundwater source.

IRN considers that consistency of compliance to LTAAEL should be a three year rolling average across all water sources in NSW.

This will give much greater assurance that planned environmental water is protected.

4. Compliance triggers

IRN supports that triggers for requiring action to ensure compliance with the LTAAEL remain at 5% across all resource units in the NSW MDB Fractured Rock groundwater source.

5. Operation of water allocation accounts

IRN does not support the 1.2 ML per unit share for access licenses in the Inverell Basalt, Liverpool Ranges Basalt and the Warrumbungle Basalt resource units. Maximum water account debit in a water year must not exceed 1 ML per unit share.

As noted above, the Liverpool Ranges and Warrumbungle Basalt resource units currently have water access rights greater than the LTAAEL/SDL. These resource units should have a maximum water debit in a water year not exceeding a value < 1 ML per unit share.

IRN does not support carry over on any license in this groundwater source.

6. Interstate trade

We note that there are provisions in Cl 48 for the transfer of access licences interstate from the Adelaide Fold Belt, Lachlan Fold Belt, New England Fold Belt and Yass Catchment resource units. These may only be permitted where administrative arrangements have been agreed to and implemented by the States.

There appears to be no policy or statutory imperative for addressing the impacts of groundwater extraction in one state, on other uses across the border.

While the draft WSP includes provisions to give effect to any future arrangements in regard to interstate trade, there needs to be careful consideration given to the protection of GDEs and instream ecological values in any trade rules.

Conclusion

IRN does not consider that the draft NSW MDB Fractured Rock WRP will meet the requirements of the Basin Plan.

The proposed rules WSP will not protect GDEs and instream ecological values, or planned environmental water, and will not achieve management of risk, or improve water quality.

For more information please contact:

[redacted]

Department of Planning, Industry and Environment
water.relations@dpi.nsw.gov.au
30.08.2019

RE: Draft NSW Murray Darling Basin Fractured Rock Water Resource Plan

Dear Sir/Madam,

I wish to express my concern as to whether the Draft NSW Murray Darling Basin Fractured Rock Water Resource Plan can genuinely achieve its objective to protect water sources facilitate to future sustainable water use within the whole Murray Darling Basin.

Whilst drought conditions may be stated as prevailing currently in NSW it is likely that this will be the way of the future as our Murray Darling Basin dries out further with predictions of reduced rainfall. All draft Water Resource Plans, especially this large and complex plan, must have the capacity to take account of changing climatic conditions and work as well integrated plans to manage these changing conditions.

It is unsatisfactory in the plan that climate change impacts are recognized as high in some resource units but low in others. This is ludicrous given that climate change impacts will occur across the whole Basin and affect recharge and interconnectivity of water sources across the whole Basin as well as within the areas of the various Water Resource Plans. The precautionary principle should be applied and climate change recognized as a high risk within all units of the plan especially given the significant information gaps evident in the plan.

These significant information gaps include omission of some Groundwater Dependent Ecosystems, limited understanding of hydraulic connections between surface and groundwater sources, poor risk assessment of environmental assets, absence of complete water quality data etc.

It is disappointing that the plan does not include proposals for monitoring of GDE condition and groundwater quality. It is also disappointing that despite high levels of salinity identified in some units, the plan does not propose to reduce the current levels of water access rights. No amount of rule changes can protect GDE already degraded from historic over extraction.

Some proposed rule changes will actually increase adverse impacts on GDEs and communities already drinking water of reduced quality eg weakening distance rules to permit drawdown of sensitive GDEs and introducing a notion of "minimal harm" to the public when everyone should be assured of access to clean safe water as a priority.

Since this WRP covers such a large area and adjoins a number of state boundaries provisions for interstate trade of water access licences must be well controlled and monitored.

The hydrological connectivity between the groundwater sources across state boundaries cannot be sustainably managed unless the different administrative regimes are consistent and ensure protection of GDE and the ecological values of waterways. The intent of the Murray Darling Basin Plan is to facilitate sustainable management across the whole basin and any inconsistencies in different State administration resolved to meet this objective and be stated clearly in the plan.

The WRP fails to properly protect planned environmental water as it moves around the Basin. The definition of planned environmental water in the current Water Sharing Plan limits protection of recharge and compromises recharge opportunities from the operation of floodplain harvesting and should not be carried over into the WRP.

In its current draft I have no confidence that the intent of Murray Darling Basin management objectives to achieve sustainable water use and restore good ecological function to the whole system will be met with this plan. The final NSW Murray Darling Basin Fractured Rock Water Resource Plan must recognize that this is a long term process after years of European over use of water and polluting land uses both in surface and ground systems.

In the interest of all Australians, I trust that the final NSW Murray Darling Basin Fractured Rock Water Resource Plan will fully reflect the objects of the legislation that guides it for the benefit of both current and future residents along the river and for visitors.

Yours sincerely

Cathy Merchant