INLAND RIVERS NETWORK

PO Box 312, Darlinghurst NSW 1300
ph 0428 817 282
ABN 34 373 750 383

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DPI Water
PO Box 829
Albury NSW 2640

nswgabshallow.gw.wrp@dpi.nsw.gov.au

SUBMISSION

Draft NSW Great Artesian Basin Shallow Water Resource Plan
GW13 Water Resource Plan Area

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 Great Artesian Basin (GAB) Shallow Water Resource Plan (draft WRP).

Background

IRN submitted substantial comments to the Status and Issues Paper on the GAB Shallow 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 the issue of the connectivity of this water source with river systems and the deeper GAB, the partial and sporadic nature of monitoring water extraction and the importance of consultation with the traditional owners.

The draft WRP is based on a number of conflicting approaches in regard to connectivity and recharge.

IRN considers that hydrological connectivity to surface waters and adjacent groundwater sources is a significant consideration for this water source. Areas of recharge through infiltration from rainfall and downward leakage from rivers and areas of discharge in the form of mound springs, swamps and other wetland types need to be clearly recognised and protected.

IRN is also concerned that consultation has occurred with only two First Nations groups of the 15 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 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 Water Sharing Plan (WSP) because of the information gaps and failure to adequately protect the environmental values supported by this groundwater source.

Groundwater Dependent Ecosystems (GDEs)

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

IRN does not support the basis of the draft WRP that this goundwater source does not have significant hydrological connectivity to surface waters or adjacent groundwater sources.

Base flows in unregulated river systems, instream ecological values and riparian vegetation are important GDEs that need support from groundwater sources during times of drought.

The significant number of springs listed in Schedule 2 of the WSP, which is not an exhaustive list, provide extremely important ecological values and water supply in an arid landscape. This water must be protected from drawdown.

IRN does not support that the proposed rules in the WSP will protect high value GDEs in this groundwater source. The rules for protecting GDEs in the current WSP will be significantly changed.

The current rules are:

To protect bores located near sensitive environmental areas:
No water supply works (bores) granted or amended within:

- 500 m of a high priority GDE and a distance of greater than 500 m if the bore is likely to cause drawdown at the perimeter of the GDE
- 40 m from the top of the high bank of a river or stream

Proposed new rules include:

1. Cl 38 (1): Reducing the minimum set back from 500m to 200m

2. Cl 38 (2): exemptions from the 200m set back further reduces the protection for GDEs
3. Cl 38 (3): this clause is highly contradictory. A high priority GDE, as mapped, has groundwater dependence. This clause is a threat to the protection of GDEs.
4. Cl 40: the decrease to the basic rights bore set back from 200m to 100m reduces the protection from drawdown to GDEs.
5. Cl 40 (2) (b): there should be no impact on high priority GDEs.
6. Cl 41: replacement bores should be at least 200m from high priority GDEs.

As a member of the Groundwater Stakeholder Advisory Panel, IRN opposed the proposed reduction of the setback distance from GDEs for basic landholder rights bores from 200m to 100m in all Groundwater Sources. This is a reduction in protection for GDEs because basic rights bores are unlicensed and unmetered and there are no restrictions on the number of basic rights bores.

The risk assessment identifies a medium risk to GDEs in the Surat resource unit. This unit has the highest number of water licences in the WRP area. These include 100 ML stock & domestic, 50 ML of town water supply and 5,662 unit shares of aquifer access licences.

However, the SDL/LTAAEL for this resource unit is 15,500 ML. The potential for development up to this level of take would constitute a considerably larger threat to GDEs.

This risk will not be managed by the proposed rules in the WSP. A reduction in the SDL is the best way to manage any risk to the ecological values supported by this groundwater source.

The water quality in the GAB Shallow groundwater source is highly saline in many areas. Management of salinity levels is critical for maintaining resilience of GDEs.

Connectivity

The draft WRP contains description of the GAB Shallow groundwater source that indicate connectivity to surface water and other groundwater sources.

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.

It also states that limits to extraction have been determined with consideration of historic extraction and groundwater levels, rainfall and groundwater connectivity to streams.

IRN is concerned that the draft WRP maintains that this groundwater source does not have significant hydrological connectivity to surface waters or adjacent groundwater sources.

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.

However, in the Surat resource unit it is described that within the alluvium there is expected to be more continuity in the distribution of local aquifers connected with the major rivers and that local supplies of potable water from bores drilled near creeks or rivers can be obtained.

The water quality analysis for the groundwater source identifies occasional low salinity water in isolated pockets near the Macquarie, Barwon, and Gwydir Rivers.

This indicates a level of connectivity with surface water.

The importance of this connectivity during periods of intense and prolonged drought is significant in regard to maintaining the ecological values of base flows, instream health and riparian vegetation.

IRN considers that the SDL/LTAAEL for this water source is too high and will cause future impacts on dependent high priority GDEs.

These include the Ramsar listed Macquarie Marshes, Gwydir Wetlands, Narran Lakes and Paroo Wetlands.

Any connectivity with this groundwater source is important and must be protected.

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.

The slopes area of the Surat resource unit has been identified as an important area of recharge for this groundwater source.

Recharge through infiltration from rainfall and downward leakage from rivers must be protected from extraction. The identified poor water quality from brackish to saline will deteriorate further if fresh recharge water is captured before replenishing water supply.

Recharge from flood waters plays an important role in topping up this aquifer system. This is demonstrated by the monitoring bore GW036883 located near the confluence of the Macquarie and Castlereagh River[1].

The impact of floodplain harvesting on recharge to the GAB Shallow groundwater source in the overlying NSW Border Rivers, Gwydir, Namoi, Macquarie and Barwon-Darling catchments must be assessed. This is a significant issue that must be addressed while calculating final volumes for licensing and in improving the management of floodplain harvesting in these river systems.

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

[1] Status and Issues paper Fig 3 p 12

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.

Risk Assessment

IRN considers that the risk to the groundwater source and its dependent ecological values will be very high if developed up to the proposed SDL/LTAAEL.

The proposed lack of protection for aquifer recharge and proposed standardised distance rules for water supply access will cause a 'net' reduction in planned environmental water and increase the risk of poor water quality.

The high priority GDEs relying on this groundwater source are at considerable risk under the proposed WRP.

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

We also note that there is no quantitative water quality information available for the Surat, Central or Warrego resource units of this groundwater source.

The draft WRP reports that the groundwater is brackish to saline in most areas with occasional low salinity water in isolated pockets near the Macquarie, Barwon, and Gwydir Rivers. This demonstrates surface water connectivity and sources of recharge.

The draft WRP also identifies that a combination of low hydraulic gradients associated with the low topographic relief of the landscape, low permeability of resource units, low rainfall and high evaporation rates results in the poor quality of the groundwater in these SDL resource units.

Figure 4[2] shows significantly high levels of salinity in some areas of the groundwater source. These levels of salinity do not meet the above objectives of the WQMP.

IRN considers that the proposed changes to rules in the WSP will not support the objectives of the WQMP to protect, enhance and restore water quality in the GAB Shallow groundwater source.

Water Sharing Plan Objectives

IRN supports the broad environmental objective of the NSW GAB Shallow Groundwater Sources WSP.

[2] Schedule F Draft WQMP p 13

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 Rule Changes

1. Minimum distance rules

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

The protection of mound springs in this groundwater source is critical. The 500m minimum distance for water supply works to protect GDEs must be maintained.

2. Increase in time period for LTAAEL compliance

IRN does not support the proposal to increase the time period over which compliance with the LTAAEL is assessed from three years to five years.

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.

3. 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.

Other comments on draft WSP

1. Concurrence with Minister for the Environment

IRN is concerned that the draft WSP states that '*The concurrence of the Minister for Environment and Energy was obtained* ***prior*** *to the making of this Plan*.' This may be an interpretation issue but raises the question about the process of obtaining concurrence as required under the NSW Water Management Act 2000.

2. Operation of water allocation accounts

IRN does not support the 1.25 ML per unit share for access licenses in the Surat resource unit. Maximum water account debit in a water year must not exceed 1 ML per unit share.

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

3. LTAAEL

IRN does not support the LTAAEL in Cl 23 for the GAB Shallow groundwater source. The volume for the Warrego resource unit is particularly over inflated in regard to the history of use in this water source. A significant number of the high priority GDEs listed under Schedule 2 occur in the Warrego resource unit. These will not be protected by the rules in the draft WSP.

The SDL/LTAAEL for the GAB Shallow water source needs to be reviewed and lowered.

4. Compliance triggers

IRN supports that triggers for requiring action to ensure compliance with the LTAAEL remain at 5%.

5. Amendments to WSP

IRN supports Cl 59 that allows adjustment to the SDL/LTAAEL as per the Basin Plan. We recommend that this adjustment occur at the commencement of the WSP so that the SDL/LTAAEL is lowered.

Conclusion

IRN does not consider that the draft NSW GAB Shallow WRP will meet the requirements of the Basin Plan.

The proposed changes to WSP rules will not protect planned environmental water, achieve management of risk, or improve water quality.

For more information please contact:

Bev Smiles
President
Inland Rivers Network
0428 817 282
inlandriversnetwork@gmail.com