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Comments on Draft Macquarie Castlereagh Alluvium Water Resource Plan

Healthy Rivers Dubbo is a grass roots community group, concerned about the declining health and resilience of the Macquarie River and Marshes, and the Murray-Darling Basin as a whole.

Healthy Rivers Dubbo welcomes the opportunity to provide comments on the Draft Macquarie Castlereagh Alluvium Water Resource Plan (draft WRP).

Background

The creeks, rivers and much of the vegetation in the Murray-Darling Basin is supported by the availability of groundwater, either as water replenishment into rivers or through direct uptake through plant roots. Healthy Rivers Dubbo is concerned that the major loss of River Red Gum forests during the millennium drought was caused by the depletion of groundwater systems.

Historical practices of over extraction of ground water in the Murray-Darling Basin have created the serious threat of depleted groundwater sources. All life in our Basin – environmental, cultural, social and economic, depends on reliable ground water sources.

On average, rates of groundwater extraction have increased by about 100% between the early 1980s and the early 2000s. Between 2001 and 2007 the average annual loss of surface water and groundwater was 150% of the total water usage in a normal year. Despite rainfall rebounding in 2007 and 2008, the Gravity Recovery and Climate Experiment (GRACE) data showed a continued decline in groundwater storage.¹

¹ http://www.groundwater.com.au/news_items/op-ed-declining-groundwater-is-a-big-problem-for-australia

Healthy Rivers Dubbo believes the Lower Macquarie is an over-allocated groundwater system that had experienced over extraction. Connectivity of the Lower Macquarie groundwater system with the Great Artesian Basin and surface flows of the Macquarie and Bogan Rivers is a significant issue that needs more assessment.

Proposed Rule Changes

1. Variable Rule

Healthy Rivers Dubbo objects to the proposed variable rule for the Macquarie Castlereagh Alluvium systems that locks in the 20% limit of change to the Sustainable Diversion Limit (SDL) as a right.

We interpret this rule change as allowing irrigators to access up to 20% over the SDL as a right in dry years, while reducing the take to 80% of SDL in wet years. We wonder how this change could, in any light, be seen to advantage the environment. This rule relates entirely to irrigator behaviour between wet and dry years and would play no role in managing risk or protecting planned environmental water in the Macquarie Castlereagh Alluvium.

If this were allowed to happen, the increased extraction from ground water sources in dry times (and we can expect even more dry years in our changing future), will cause the aquifers to lower, becoming more hydraulically disconnected from surface water – particularly in the over allocated Lower Macquarie.

This proposed rule change would significantly reduce the availability of planned environmental water to support Groundwater Dependent Ecosystems during dry times.

This proposed rule will not manage the risks associated with climate change. As the years become dryer, the extraction of SDL plus 20% take will become more the norm than the exception.

We believe this proposed rule change paves the way for further permanent drawdown of aquifers. The permanent drawdown of the water source is a direct reduction in planned environmental water. This would be a perverse outcome for a WRP.

2. Removal of protection of recharge

Healthy River Dubbo does not support the proposed rule change for the protection of planned environmental water by removing the reference to recharge.

The actual volume of planned environmental water has already decreased in these groundwater systems. The timing of the availability of planned environmental water is critical during dry periods and the protection of a percentage of recharge is an important factor in protecting the integrity and water levels in alluvial aquifer systems.

While this change has been presented as merely a change of definition, not effecting the volume of environmental water, we question this assumption and ask why it is necessary to change the definition of recharge, if not to erode protection of environmental water.

3. Increase in time period for LTAAEL compliance

Healthy Rivers Dubbo does not support the proposal to increase the time period over which compliance to the LTAAEL in the Lower Macquarie Alluvium system is assessed from three years to five years to provide consistency across water sources.

The social licence of the irrigation industry has been adversely effected in the last year and a half, as allegation of serious levels of water theft have come to light, and several court cases have been instigated. The community needs to be reassured that water is not being stolen, the only way to do that is with more regular compliance checks.

Healthy Rivers Dubbo considers that consistency of compliance to LTAAEL should be a three year rolling average across all water sources. This will give much greater assurance that planned environmental water is protected.

Risk Assessment

The Risk Assessment for the Macquarie Castlereagh Alluvium Water Resource Plan Area Schedule D identifies many high not tolerable and medium not tolerable risks to the alluvium:

- Risks to structural integrity of the groundwater system in Lower Macquarie Zone 1 and the Upper Macquarie are considered High not tolerable. Risks in Lower Macquarie Zone 2 and the Cudgegong are medium not tolerable.
- Risk of local drawdown reducing groundwater access by consumptive users in Lower Macquarie Zone 1, Lower Macquarie Zone 2, Lower Macquarie Zone 3 and Upper Macquarie Alluvium are currently High not tolerable. In Lower Macquarie Zone 4, Lower Macquarie Zone 6, Coolaburragundy-Talbragar and Cudgegong are medium not tolerable.
- Risk of climate change reducing recharge and groundwater availability in the Bell Valley and Cudgegong is considered high not tolerable. In Lower Macquarie Zone 1, Upper Macquarie and Coolaburragundy-Talbragar risks are considered medium not tolerable.
- Risks of growth in basic landholder rights reducing groundwater availability is in tolerable range in only 3 of the 11 areas covered by this draft WRP, 6 of these 11 areas being considered high risk not tolerable. Healthy Rivers Dubbo is very alarmed at these existing elevated risks.
- Risk of growth in local water utilities reducing groundwater availability in the Bell Valley, Coolaburragundy-Talbragar and Cudgegong is considered High not tolerable, and in the Lower Macquarie zone 1 and Upper Macquarie considered medium not tolerable.
- The risk of irrigation efficiency and improved water delivery reducing recharge is not tolerable in the Lower Macquarie Zone 1, the Upper Macquarie, Bell Valley, Coolaburragundy-Talbragar and Cudgegong. Healthy Rivers Dubbo is very concerned that further pipelines on our river would cause severe reductions in the availability of recharge water.

- Risks of groundwater extraction causing local drawdown impacting Groundwater Dependent Ecosystems is intolerably high in the Lower Macquarie Zone 1, Lower Macquarie Zone 3, Lower Macquarie zone 4, Lower Macquarie zone 6, Upper Macquarie and Coolaburragundy-Talbragar.
- The risk of groundwater extraction causing local drawdown impacting instream ecological values is medium not tolerable in 4 of the 6 Lower Macquarie zones.
- The risk of climate change reducing recharge and groundwater availability impacting groundwater Dependent Ecosystems is considered high not tolerable in the Bell Valley.
- Risk of climate change reducing recharge and groundwater availability impacting instream ecological values is considered medium not tolerable in the Bell Valley and Cudgegong.

Healthy Rivers Dubbo is alarmed at the number of risks to groundwater in the Macquarie Castlereagh area covered by this draft WRP that are currently considered intolerable by the NSW Government.

We believe the rule changes proposed in this draft plan will not address this risks, but that they will in actual fact exacerbate many of them.

Risk Assessment Pathway

The 'Risk Treatment Pathway' is inadequate to address the high number of currently intolerably high risks.

The strategies for managing intolerably high risks amount to little more than to limit total water extraction and manage the local rate of groundwater extraction. This strategy is not explained, nor is it supported by the variable rule change that will increase the level of take in dry years.

In the Risk Assessment and the NSW Groundwater Environmental Monitoring, Evaluation and Reporting Plan there is no clear reference to triggers that would elicit strategies to address risk. Not only are the strategies to address risk vague and broad, the pathway to their activation is not clearly expressed.

This plan needs a strong mechanism where feedback from monitoring and evaluation triggers a change in management that will reduce risks. We suggest another column be added to the risk assessment that informs when to respond where monitoring and evaluation shows activities are exacerbating risks, and how quickly action should be taken to reverse direction away from risk.

Given the shocking prevalence of high and medium risks in the Macquarie Castlereagh Alluvium that currently exist, Healthy Rivers Dubbo believes the strategies to address risk (listed below) in all 'not tolerable' areas be applied immediately:

1. Limit total water extraction (basic rights and groundwater take) within each groundwater source/SDL resource unit to predetermined sustainable levels.
2. Manage the location and rate of groundwater extraction at a local scale within water sources and SDL management units to prevent or manage localised drawdown related impacts.

Climate Change

Climate Change is not adequately addressed in this risk assessment. A mere 'wait and see what happens, then update the SDL in 10 years' approach falls well short of responsible government response in our opinion. The impacts of climate change are here, droughts will be more severe, as we are seeing currently.

As detailed in the NASA report referenced in this article² on the groundwater.com.au website, we know that even after the rains return after drought, groundwater reserves continue to fall in successive years. A lot more research is needed into the behaviour of groundwater sources to replenish themselves. A significant amount of caution is required with setting SDLs for groundwater, and we believe the risk assessment does not adequately reflect the risks.

Reporting

We are alarmed at:

- The high number of risks classified as intolerable in our groundwater area
- The inadequacy of the risk assessment to take climate change seriously
- The lack of description of the strategies to address risk
- The lack of triggers to enforce the strategies to address risk
- The variable rule that will allow 20% increase of SDL in dry years to become a right

Given the points above, we would consider a need to bring all the reporting requirements down from 5 years to 3 years, in line with our recommendation above that compliance to the LTAAEL be assessed on a 3 year basis, not 5 years.

Healthy River Dubbo believes it is essential that reporting include what actions have been taken each year to reduce the risks to our aquifers that currently exist, may develop, or may worsen.

Conclusion

The development of Water Resource Plans (WRPs) is not intended to be merely an extra layer of bureaucracy overlaying the indoctrination of historical over extraction. Rather, the WRPs are to be the tool that the Murray-Darling Basin Plan uses to change behaviour and actually protect the environment.

It is fundamental that each water resource plan not compromise ground water dependent assets, nor the connectivity between groundwater and surface water (as per Basin Plan 10.19 – 10.21 including "A water resource plan must be prepared having regard to whether it is necessary for it to include rules which ensure that, for groundwater that has a significant hydrological connection to surface water, the operation of the plan does not compromise the meeting of environmental watering requirements (for example, base flows).")

We interpret the proposed changes to the water sharing rules for the ground water sources of the Macquarie and Castlereagh will increase take, reduce the monitoring of take, lower the

² http://www.groundwater.com.au/news_items/op-ed-declining-groundwater-is-a-big-problem-for-australia

aquifers, reduce connectivity between ground water and surface water, reduce water quality and erode the current levels of protection of environmental water.

Healthy Rivers Dubbo does not consider that the draft WRP will meet the requirements of the Basin Plan.

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