Submission to the 2026 Murray-Darling Basin Plan Review:

Discussion Paper

By:
Gwydir Valley Irrigators Association Inc
May 2026

making every drop count

Contents

1 Terms of Reference

The review of the Basin Plan is an opportunity to build on what's working, identify what needs to improve and focus on the priorities for the next decade. It is an opportunity to improve how the Basin is managed and to move forward. Feedback on the following questions is recommended:

• What do you think of the issues and options presented?

• Are there other issues and options that should be considered?

• What do you see as the priorities and why?

2 Summary and Purpose

The Gwydir Valley Irrigators Association (GVIA) is the representative body for water entitlement holders in the Gwydir Valley and welcome the opportunity to provide our feedback on the 2026 Murray Darling Basin Plan Review discussion paper from the perspective of our region.

This document aims to represent the concerns, views and experiences of our members and the community. Each member reserves the right to express their own opinion and is entitled to make their own submission.

The barrage of water reform through threats of rule changes, Basin plan and Water Sharing Plan reviews, minimum inflow reviews and connectivity aspirations are undermining the confidence of the industry, and continuously eroding access to water entitlements with no clearly articulated objectives or environmental metrics. The cumulative impacts of these endless reforms, particularly in the last two years are being ignored by government yet are significantly impacting industry viability and community wellbeing.

We firmly believe that the Murray Darling Basin Plan (the Plan) must change to be a management plan where the focus is on outcomes. To do this states will have to be held accountable for delivery of community support constraints, infrastructure to enable fish passage must be a prioritised and efficient use of environmental water must be supported. This will require balance and resourcing, but the massive achievements delivered through water recovery since 2008 cannot deliver environmental outcomes if infrastructure, management and efficiency are not the primary focus of the Basin Plan. Without this there will be further erosion of the social fabric of region communities.

The GVIA and our members, are members of the NSW Irrigators Council and National Irrigators Council and we generally support the submissions made by those organisations.

Thank you for this opportunity to provide our input and perspective.

3 Recommendations

1. ***No more water from agriculture (by any means)***
    a. ***If the MDBA or Government decide that they want any additional water for the environment, they must purchase it from the open market. We cannot accept rule changes as they are a form of compulsory acquisition in direct conflict with property rights.***

2. ***MDBA strongly reinforce the requirement that NSW government complete constraints in the Gwydir as required under the Northern Toolkit. This must involve.***
    a. ***Investigation of strategic implementation of infrastructure (including levees to channel water through private land to the Ramsar site) in the Gwydir.***
    b. ***Proactive work with impacted community members to complete constraints.***
3. ***MDBA urgently pursue a European Carp management strategy which ideally includes the use of Cyprinid herpesvirus-3, the Carp herpes virus.***
4. ***The MDBA investigate mechanisms to support implementation of infrastructure such as fish passage in a practical, transparent, cost-effective process.***
5. ***The GVIA support the MDBA position that 320GL water recovery in the Northern Basin is sufficient to satisfy the Environmentally Sustainable Level of Take (ESLT) requirements of the Water Act.***
6. ***We encourage the MDBA to complete an audit of how environmental water is being utilised in the northern basin.***
7. ***We request time to***
    a. ***Enable the benefits of licencing floodplain harvesting to be seen and***
    b. ***The benefits of the completion of the 'bridging the gap' to be seen.***
8. ***If the MDBA decide to further investigate river connectivity in the northern basin we encourage***
    a. ***Firstly, infrastructure challenges in the Barwon Darling and Menindee are addressed***
    b. ***That the MDBA consider what the problem is, determine if there are additional environmental benefits that could be achieved and how existing environmental water could be use more effectively to deliver these environmental outcomes.***
9. ***We encourage the MDBA to complete their own independent analysis starting with an assessment of the 2016 Northern Basin Review.***
    a. ***Any progress beyond this point must entail independent hydrological assessments that do not have the limitations seen in the NSW assessments.***
10. ***If the MDBA decide that they need additional water to create connectivity in the Barwon Darling, they must purchase their requirement on the open market. We will not accept rule changes as they represent compulsory acquisition.***
11. ***Any water purchased from the northern Basin should focus only on demonstrated environmental benefits that would accrue from this water purchase.***
12. ***We would expect communities would be appropriately supported/compensated to adjust to the significant losses that would flow from any possible changes.***

13. ***No changes to Gwydir surface SDL are considered as MDBA assessment indicate that the driver of impact is not volumetric.***
14. ***Users are actively engaged in consultation on the Gwydir Surface water source between the MDBA and NSW DCCEEW on SDL's now and at any stage into the future.***
15. ***No change to Lower Gwydir Alluvial SDL as 71T dealing arrangements (trade restrictions) appear to be providing benefit and need to be given time to demonstrate that they are suitable.***
16. ***Support maintaining the existing 71T trade restrictions for the Lower Gwydir Alluvial water source until 2035 (15 years) to enable their impact to be fully appreciated.***
    a. ***Request 15 year time frame as the aquifer has low sensitivity to use or changes in recharge.***
    b. ***If at time of WSP review (2029) improvement is not being observed. GVIA request detailed consultation with NSW department hydrogeologists team to discuss options.***
17. ***Users are actively engaged in consultation on the Lower Gwydir Alluvial water source between the MDBA and NSW DCCEEW before any changes to management are made.***
18. ***The MDBA prioritise investment in infrastructure at Menindee Lakes including upgrading Pamamaroo inlet regulator, installing a gated structure on weir 32 and implementing fish passage on main weir.***
19. ***The MDBA prioritise urgent investment in the implementation of a European carp management program incorporating habitat restoration and monitoring of secondary pest species.***
20. ***Climate change policy must support adaptation rather than impose prescriptive reductions in water reliability and allocations.***
21. ***The MDBA actively support diversification of alternative water supplies to enable water security in highly variable ephemera river systems. This must include support for state and local government programs necessary to fund strategic investment in water security for regional communities.***
22. ***Improved socio-economic assessments of costs and benefits of proposals be mandated to include assessments of Socio-Economic Indexes for Areas (SEIFA) and community viability.***
23. ***A comprehensive cost benefit analysis be completed for any water recovery proposals.***

4 Summary

Water recovery in the Gwydir has had significant impacts since 1996[1] when the Environmental Contingency Allowance was established. The recovery of water has continued with the last significant reduction the licencing of Floodplain harvesting which saw a reduction in access of 52,900 megalitres, an average 30% reduction. The licences were implemented in August

[1] Gwydir Valley Irrigators Association Inc - History of Water Reform

2022. The full impacts of this reform are yet to be experienced by members and the benefits to the environment are yet to be seen.

The discussion paper and sustainable rivers audit and other MDBA reports all confirm that limitations to achieving environmental outcomes are not flow related. We support this finding, which confirms that there is not a need for any further water recovery. If there is a genuine intention to progress beyond the significant successes achieved to date the Basin Plan needs to shift to focus on delivery of community supported constraints, complementary measures and the urgent updates to infrastructure such as weir 32 and main weir at Menindee Lakes.

The MDBA initial assessment of SDL has highlighted that they may be some risks in some water sources. We contend that there is no need to adjust any SDL's, this is especially so for the Gwydir. The Gwydir surface SDL is only at risk because the NSW government has not completed the constraints program under the Northern Basin toolkit which is impacting delivery to achieve intended floodplain connectivity. The Lower Gwydir Alluvial SDL has only a couple of isolated sites where there are some concerns. The drawdown and monitoring of the aquifer is being closely monitored by the NSW government hydrogeologists, who have no immediate concerns. There have been trade restrictions introduced recently and these need to be given time to deliver the intended outcomes in this highly buffered aquifer with low sensitivity.

Infrastructure at Menindee Lakes (main weir, weir 32 and Pamamaroo inlet regulator), is not fit for purpose and is negatively influencing water quality and fish survival. This is leading to excessive water use through dilution flows, this is having an increasing impact on the reliability of entitlement across the northern basin. This infrastructure must be urgently upgraded. The implementation of a carp management strategy must also be seen as a priority to elevate pressure at the lakes.

5 Water Recovery

The initial basin plan of 2012 developed Sustainable Diversion Limits (SDL) to bring the basin water use back to an Environmentally Sustainable level of Take (ESLT). This has been successfully completed with 72% of basin river flows dedicated to environmental sustainability. Consumptive use across the basin is now consistently below these SDL.

In the last 25 years there has been significant water reform with 238,266ML removed from the productive pool in the Gwydir through water purchases, increases to the Environmental Contingency Allowance and licencing of Floodplain Harvesting.

Entitlements owned for environmental purposes total more than 186,000ML, plus an Environmental Contingency Allowance of 45,000ML. The NSW and Commonwealth environmental water managers are responsible for 28.5% of high security entitlement, 29% of general security entitlement and 13% of supplementary entitlement for environmental use. As a result of water reform, only approximately 19% of the total river flows are available for diversion for productive use. The licencing of FloodPlain Harvesting in 2022 is estimated to lead to a more than 25% reduction in floodplain harvesting (that existed prior to licencing) across the northern Basin, estimated to return in the order of 100 gigalitres per year on average to floodplains, rivers and creeks. In the Gwydir there was a 30% decrease in access equivalent to 52.9GL of additional inflows to the environmental pool. These reductions in floodplain harvesting are expected to result in significant local environmental improvements.

In the Gwydir valley, for example, current modelling shows an approximately 140% improvement in some environmental water requirements for waterbirds in Ramsar listed sites[2].

These water recoveries have had an enormous impact on the community as shown in the assessments completed as part of the Northern basin review.

- The socio-economic impact of environmental water recovery in the Gwydir was significant. Water reforms trigger ripple effects across communities. Less water for farming means fewer jobs, lower local spending, smaller schools, reduced services, and declining community participation, the 'multiplier effect'.
- The Northern Review[3] identified that not only were there substantial reductions in population and employment but that there were notable declines in the Socio-Economic Indexes for Areas (SEIFA). Moree alone saw the following declines.

SEIFA	2006	2011
education and occupation	5	↓ to 3
advantage and disadvantage	5	↓ to 3
Economic resources	4	↓ to 2

In recent years we have seen a barrage of water reforms threatening the viability of the irrigation industry in northern NSW. Of most significant concern are changes to triggers at Menindee Lakes, recommendations for rule changes from the NSW Connectivity Panel report or from the Natural Resource Commission (NRC) review of Water Sharing Plans (WSP). The lack of appropriate socio-economic assessments, explanation of environmental metrics expected or mechanism to monitor any potential achievement of outcomes is of significant concern.

Rule changes are a form of compulsory acquisition in direct conflict with property rights; which is neither equitable nor appropriate in our contemporary water management system.

Additionally, we are concerned that the NSW Alternatives to Buybacks Plan[4], proposes rule changes as a viable option. The claims that that such an approach would deliver greater environmental benefits and minimise impacts to community demonstrates a complete lack of understanding of community, water or environmental outcomes in northern NSW.

Request

1. ***No more water from agriculture (by any means)***
    a. ***If the MDBA or Government decide that they want any additional water for the environment, they must purchase it from the open market. We cannot accept rule changes as they are a form of compulsory acquisition in direct conflict with property rights.***

[2] **NSW Government Response** Inquiry into Floodplain Harvesting

[3] Northern Basin Review - Technical overview of the socioeconomic analysis

[4] NSW Alternatives to Buybacks Plan

6 Sustainable Rivers Audit

The sustainable rivers audit provided an assessment of the Gwydir by the MDBA. The socio-economic snapshot suggests that tourism to the Gwydir wetlands is a major economic contributor. Unfortunately, this is not a correct assessment. The Gwydir wetlands are not easily accessible outside specific events or tours. The road to the site is impassable without a four wheel drive most of the year, the site is frequently inaccessible with the gates locked or significant inundation making it unsafe for visitation. In addition, there is a significant feral pig issue on the wetlands as they provide an almost permanent water source, a good food source (frequently native species or breeding migratory birds) and vegetation for cover.

River flows and connectivity assessments indicate that there is very good longitudinal connectivity along with freshes and bank full flows which demonstrate that there is excellent sustainable sharing of the water resources.

> *"on average, 75% or more of longitudinal environmental watering requirements were achieved over the past 5 years. The valley met at least 75% of all longitudinal connectivity environmental watering requirements in every year over the assessment period (1988 to 2022),and met 100% in most years." "reduced success often occurred after a sequence of moderate-to-very-dry years. These conditions resulted in the lowest levels of achievement in 1994 and 2019."*
>
> *"During the assessment period (1988 to 2022), there was high variability in the achievement of environmental watering requirements for freshes and bankfull flows. The achievement of environmental watering requirements increased from very dry years to very wet years. Notably, fewer requirements were met after a sequence of moderate-to-very-dry years, such as in 1992 and 2009. In contrast, all requirements were met for 3 consecutive years from 2020 to 2022."*

These observations are not unexpected in a highly variable ephemeral system. The 1966 Water Resources of the Gwydir Valley by the Water Conservation and Irrigation Commission of NSW notes that extremely low rainfalls have frequently been seen since 1879. In 1902 there was 7.97 inches (199.25 mm) similar low falls were experienced across the valley. The report also notes that *"Streamflows in the Gwydir River Valley are subject to a high degree of variability. Actual and estimated streamflow records over a period of 74 years indicate that the annual runoff from the valley can range from less than 1 per cent to more than 500 per cent of the estimated long term average annual runoff of 670,000 acre feet.*"

The assessments for floodplain connectivity are less favourable, primarily being achieved in above average rainfall or flood events and decreasing after successive years of below average or very dry years as seen between 2012 to 2019. The condition of the floodplain tree stands has also been assessed as fair.

It is important to recognise that the licencing of floodplain harvesting in 2022 reduced the extraction of flood water by 52,900ML in the Gwydir, time must be given to demonstrate the benefit of this significant change in access. This change, we believe will increase all three floodplain connectivity indicators.

The Basin does not need more water for the environment. There is however a real need to maximise the benefits of this environmental water to ensure that it is utilised strategically and efficiently to develop outcomes.

Of critical relevance for all three floodplain connectivity indicators in the Gwydir is that the NSW government have not completed their requirements under the Northern Basin toolkit. To enable floodplain connectivity and inundation of floodplain tree stands outside of wet seasons and major floods constraints in the Gwydir wetlands must be managed.

To enable environmental water managers to achieve outcomes and improved environmental indicators in the Gwydir, governments must work in partnership with landholders to relax constraints.

We believe that the MDBA should strongly reinforce the requirement that the NSW government complete constraints in the Gwydir as required under the Northern Toolkit. Of most importance however is that this must involve investigation of strategic implementation of infrastructure such as small levees to channel water through private land to the Ramsar sites in the Gwydir that are difficult to reach due to elevation. Such infrastructure previously existed and was required to be removed following a notification from NRAR.

Together the licencing of floodplain harvesting and the completion of the Gwydir constraints relaxation project will result in positive environmental outcomes. We need to allow time for the benefits of both projects to be seen.

There is also a need to address fish passage. Fish passage in weirs across the basin have been legislated but many are yet to be implemented, including five in the Gwydir which given delays in implementation are now prohibitively expensive. These structural upgrades have the potential to provide environmental benefits, improve utility of environmental water enhance fish breeding and survival and not impact on community viability. Such investment would enable more strategic and efficient utilisation of Held Environmental Water (HEW) focused on delivering environmental outcomes must be the first priority in this space.

We are concerned that environmental impact statements and environmental offset are rumoured to be significantly increasing the cost of implementing fish passage across the basin. If this is true, then it suggests that bureaucracy is preventing the achievement of real environmental outcomes.

With regard native fish we note that the NSW Department of Primary industries fish monitoring summary[5] shows improvement in most native fish populations since the end of the 2019 drought. Unfortunately, the carp population remains a problem. This was also observed by the commonwealth. This strongly reinforces the need for prioritising the management of European Carp, and other introduced species.

Requests

2. ***MDBA strongly reinforce the requirement that NSW government complete landholder supported constraints in the Gwydir as required under the Northern Toolkit. This must involve.***

[5] Chapter 3 Basin Plan Fish Monitoring Summary (2014/15 – 2022/23): Gwydir Water Resource Planning Area

a. ***Investigation of strategic implementation of infrastructure (including levees to channel water through private land to the Ramsar site) in the Gwydir.***

b. ***Proactive work with impacted community members to complete constraints.***

3. ***MDBA urgently pursue a European Carp management strategy which ideally includes the use of Cyprinid herpesvirus-3, the Carp herpes virus.***

4. ***The MDBA investigate mechanisms to support implementation of infrastructure such as fish passage in a practical, transparent, cost-effective process.***

7 Connectivity

Northern Basin is very different to the southern basin, connectivity as seen in the south cannot be achieved in the highly variable ephemeral northern basin. The flows in northern tributaries are highly connected to episodic rainfall events, which means that when dry times are experienced the northern rivers will and have always ceased to flow, as the Moree rainfall and Mehi gauge data shows. The more prolonged and more significant the below average rainfall the greater the impact as seen in 2018 and 2019. This is reinforced with data from the gauge at Collarenebri.

Figure 1: Moree rainfall and Mehi river flows

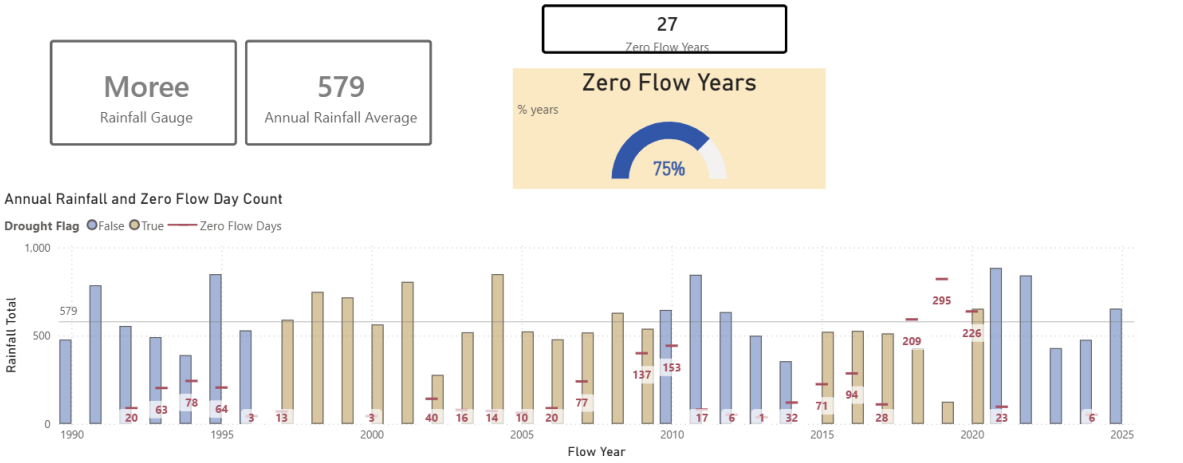
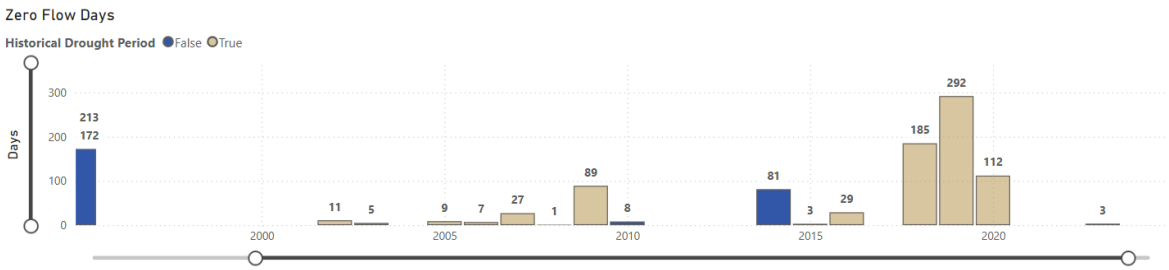


Figure 2: Collarenebri river flows



Source: BOM rainfall data Moree and gauge data water insights Mehi at Moree (418055) and the Barwon River at Collarenebri (422003).

These same observations were discussed in the Water Resources of the Gwydir Valley 1966. The rainfall from December 1901 to November 1902 was 6.42 inches (160.5 mm) which resulted in the lowest stream flows recorded in the valley. One hundred years later, the message is the same if it doesn't rain the rivers will not flow.

Unfortunately, climatic conditions have been omitted as being one of the pressures, possibly the most important pressure contributing to the conversation on connectivity and cease to flow events in the northern basin. The ecological communities of northern rivers have evolved to depend on the cycle of wet and dry periods, episodic flows, and intermittent connectivity. Extended cease-to-flow periods in the Barwon-Darling were consistently seen prior to regulation of northern tributaries and are part of the natural system, not indicators of regulatory failure. Acknowledging the differences between the northern and southern basins and recognising the direct linkage between climatic conditions and river flow is essential if we are to consider this topic on a scientific basis rather than a political basis.

In addition, significant wetlands and channel capacity limit connectivity in several northern tributaries outside of flooding and high rainfall events. The Water Resources of the Gwydir Valley 1966 once again states; "*Only a small percentage of water passing Moree in a normal season enters the Barwon as flow in the main channel of the Gwydir River. However, during floods a wide area of flood plain is inundated, and flow enters the Barwon River at a number of points. The catchment area below Moree is largely non-contributary except in very wet seasons*." Since regulation the flood runners of the Carole Creek, the Mehi River and the Moomin Creek have been deepened and weirs installed. This has enabled irrigation and the delivery of the existing Held Environmental Water down these streams. Creating greater connectivity than was possible prior to regulation.

Prior to regulation of the northern tributaries there was more variability in flows in the Barwon Darling to Menindee. Storage dams such as Copeton have meant that droughts are shorter, start later and typically are less deep than naturally, because the dams have meant that the rivers flow more consistently and longer than they would naturally[6].

It is disappointing to see comments such as "During long, dry periods, held environmental water entitlements provide little in-stream benefit because water allocations are low or at zero." When in reality this is not true. On more than one occasion Held Environmental Water (HEW) from the northern valleys has been used to create connectivity in this ephemeral system[7],[8].

The environment holds a third of all entitlement in the Gwydir (approx. 231,000ML) plus the additional inflows from licencing floodplain harvesting entitlement. Environmental releases currently in 2022-2023[9] and in 2018 – 2019 were stored in Copeton Dam for years before being utilised. If the environmental water managers wish to create flow in an ephemeral river system, they already have the resources to do this.

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[6] Comment from Government organisation

[7] Monitoring of the 2019 Northern Fish Flow | Murray–Darling Basin Authority

[8] Commonwealth Environmental Water Holder improving northern Basin rivers over summer - DCCEEW

[9] Northern Refresh - 2022-23 - DCCEEW

Critically it is also important to remember that the original Basin Plan included shared water recovery in the northern basin to meet the needs of the Barwon Darling system. As the majority of this volume has now been recovered, we believe there needs to be time to demonstrate how this water is being used by the environmental water holders to deliver flow and environmental outcomes in the Barwon Darling. This time is important as achievement of SDL has been only recently progressed to be nearly complete in some stretches on the northern basin. We encourage the MDBA to complete an audit of how environmental water is being utilised to inform the most efficient use of the resource.

7.1 NSW connectivity program

This program is of significant concern as it is focused on a panel report, referred to as 'not government policy' yet the NSW department are using it as the basis to take options to NSW cabinet. The connectivity work being assessed by NSW government lacks appropriate consideration of environmental metrics, has utilised modelling with significant limitations and has not appropriately considered the impacts to upstream users and communities.

The connectivity panel was appointed as a commitment made to the nature conservation council (NCC) by the NSW environment and water ministers in return for the NCC to discontinue a legal case. The ministers appointed a panel to investigate connectivity; they were seen by government as independent of government.

The recommendations of the panel have been assessed by the NSW government. Unfortunately, the government don't appear to have considered any alternatives outside of small adjustments to panel proposals. Our concern stems from what appears to be a lack of understanding of what the panel proposals may or may not result in from an environmental perspective. Critically the only messaging we have is that the NSW government wants to "increase connectivity." There does not seen to be an understanding of what this is and if it is tied to any environmental outcome.

To date there has been no presentation of the purpose, no problem statement, no explanation of outcomes being targeted and no objectives intended from any of the proposed recommendations.

The assessment of the ecological outcomes gives a feeling of possible benefits. There has been not qualitative or quantitative assessment of any of the proposals. Rather it presents "an assessment of likely ecological outcomes of the predicted hydrological changes." Given the significant limitations to the hydrological modelling this is concerning. There is little consideration of the current ecology, nor of the benefits associated with completion of the Bridging the Gap project or the licencing of floodplain harvesting, which is estimated to result in an additional 100,000ML of inflows annually in northern NSW[10].

Model limitations have been clearly outlined in the NSW department Analysis of the Connectivity Expert Panel Recommendations: Hydrologic modelling assessments[11]. The report notes the following:

[10] **NSW Government Response** Inquiry into Floodplain Harvesting

[11] Analysis of the Connectivity Expert Panel Recommendations:

"There are some processes that are currently occurring in the northern Basin that are relevant to understanding the existing level of connectivity between the main tributary river systems and the Barwon-Darling River that are not yet represented in river system models.

This includes:

- *water recovery under the Basin Plan and its use to achieve environmental outcomes*
- *any flows reaching or returning to rivers as a result of the licensing[12] of floodplain harvesting or any other restrictions applied in model scenarios*
- *the protection of held environmental water flowing in the Barwon-Darling and lower Macquarie under the active management process*
- *representation and protection of additional flows from Queensland arising from water recovery under the Basin Plan.*

The absence of model enhancements to represent these processes will generally lower the modelled base case flows into and along the Barwon-Darling River, and therefore also lower the flows modelled in each scenario and under-estimate the achievement of the environmental flow requirements set out in long term water plans."

The report goes on in the 'statement on connectivity modelling reliability' to say *"Model results have not been bias-corrected or post-processed to remove known biases. Model results and subsequent analyses should be interpreted with caution, including by considering model limitations and biases.*"

The report also highlights that there are issues with representing return flows to the system from floodplain harvesting restriction, and the representation of held environmental water. With regard held environmental water the report states; "*It is likely that a full held environmental water representation in the models would indicate improved downstream flow outcomes relative to the base case. This means that the models are likely to overestimate the quantum of intervention required to achieve specific flow targets.*" Finally, "*Active management to protect additional environmental flows in the Barwon-Darling has not been modelled*."

Until such time that all these significant gaps have be appropriately considered in the models we believe it means the work completed by the department is not presenting a realistic assessment. We request that the MDBA not use the analysis of panel recommendations to inform decisions on connectivity.

The economic analysis of the recommendations is also of significant concern; at this stage it is a high level scoping study. There is yet to be a cost benefit analysis completed for any of the individual proposals from the panel, or from any combination of proposals. There has also been no socio-economic analysis considered for any of the proposals individually or for any combinations. Without a detailed, transparent assessment of the cost benefit analysis including a quantitative and qualitative assessment of proposed improvements to environmental indicators and a full socio-economic assessment of impacts to the community, (as completed in the Northern Basin review) the work completed by the NSW department is

[12] Licensing of floodplain harvesting is yet to occur in the Namoi Valley and is not included in the model used for this assessment. Instead, floodplain harvesting is represented at existing levels, unrestricted by licensing

not presenting a realistic assessment of the cost of such an extreme proposal. We request that the MDBA not use any of the economic assessments completed by the NSW department on proposals from the connectivity panel.

If the MDBA believes that there is an actual need to improve river connectivity in the ephemeral northern basin we recommend they complete an independent assessment of the region and that this should start with an assessment of the 2016 Northern Basin Review[13], which found less water was needed to meet the environmental objectives rather than more. Any progress beyond this point must entail independent hydrological assessments that do not have the limitations seen in the NSW assessments.

Of additional concern the current NSW Government options under consideration rely solely on rules-based changes, having not considered any alternatives such as acquiring water through the market.

Our membership, both large and small recognise water entitlements as statutory property rights. They are defined and enforceable under legislation, transferable and tradeable, recognised as assets on balance sheets, used to secure finance, and purchased and sold in regulated markets. These principles must be acknowledged to be the hallmarks of property rights and be treated as such by regulators and policy makers.

Recognition of water as a statutory property right requires that governments provide stable and predictable entitlement frameworks, avoid retrospective or uncompensated changes, use transparent acquisition mechanisms where water is required for public purposes, and maintain confidence in the integrity of water markets. These are rule-of-law principles, not merely commercial preferences.

Rules-based changes are a form of compulsory acquisition without compensation, it is neither equitable nor appropriate in our contemporary water management system as they are a fundamental attack the property right that exists with water and is in direct opposition to the long-held Murray-Darling Basin position that water should be acquired through market mechanisms from voluntary participants.

The GVIA cannot support Rules-Based changes that have a negative impact reliability or allocations of existing water entitlement holders, including those held by the CEWH. This is of significant concern with the NSW connectivity program.

If the MDBA determine to pursue anything further regarding connectivity, it must acknowledge many of the challenges in the Barwon Darling are infrastructure related. There are long standing issues with weirs to secure critical human needs in communities such as Wilcannia. There are also known problems with the Menindee lakes, water quality and fish deaths. All of which are linked to infrastructure that is not fit for purpose. This infrastructure has been a known problem for more than 20 years, if as a nation we want to deliver a healthy working basin it must be urgently upgraded. We believe addressing these infrastructure issues will significantly improve the health of the Barwon Darling and remove the need for any further changes to existing access for entitlement holders.

[13] Northern Basin Review – technical overview of the social and economic analysis | Murray–Darling Basin Authority

Should the MDBA decide that they wish to further investigate connectivity we encourage them to firstly address the infrastructure challenges. We encourage the MDBA to complete an audit of how environmental water is being utilised in the northern basin. There must also be time to enable the benefits of licencing floodplain harvesting to be seen and the benefits of the completion of the 'bridging the gap' to be seen. We believe it would be improper to pursue the concept of connectivity until all the above have been completed or assessed by the MDBA.

We encourage the MDBA take time to consider what the problem is, determine if there are additional environmental benefits that could be achieved and how existing environmental water could be use more effectively to deliver these environmental outcomes. These assessments should include metrics for assessing the environmental benefits from any water, either existing HEW and or PEW.

Request

5. ***The GVIA support the MDBA position that 320GL water recovery in the Northern Basin is sufficient to satisfy the Environmentally Sustainable Level of Take (ESLT) requirements of the Water Act[14].***
6. ***We encourage the MDBA to complete an audit of how environmental water is being utilised in the northern basin.***
7. ***We request time to***
    a. ***enable the benefits of licencing floodplain harvesting to be seen and***
    b. ***the benefits of the completion of the 'bridging the gap' to be seen.***
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9. ***We encourage the MDBA to complete their own independent analysis starting with an assessment of the 2016 Northern Basin Review.***
    a. ***Any progress beyond this point must entail independent hydrological assessments that do not have the limitations seen in the NSW assessments.***
10. ***If the MDBA decide that they need additional water to create connectivity in the Barwon Darling, they must purchase their requirement on the open market. We will not accept rule changes as they represent compulsory acquisition.***

[14] MDBA response to Productivity Commission Information Request 2023

11. ***Any water purchased from the northern Basin should focus only on demonstrated environmental benefits that would accrue from this water purchase.***
12. ***We would expect communities would be appropriately supported/compensated to adjust to the significant losses that would flow from any possible changes.***

8 Initial assessment of SDL's

We note that the initial assessments of SDLs were completed considering 3 lines of inquiry:

- LoE1: outcomes supported by management settings and the level of water recovery as of June 2024
- LoE2: a fully implemented Basin Plan, assuming 300 gigalitres (GL) water recovery in response to a SDLAM shortfall and the 450 GL of additional water, without constraints relaxed.
- risks and vulnerabilities to environmental outcomes under future climate scenarios.

Of most concern is that the MDBA has used LoE2 as the primary line of enquiry. This is inappropriate as the assumptions fail to recognise that irrigation communities are expected to forgo addition water to meet the SDLAM shortfall or the 450GL constraints program, while states governments are not held accountable for their failure to deliver commitments such as constraints or SDLAM. The focus on volumetric outcomes will not deliver environmental outcomes without delivery by states of programs such as constraint relaxation.

8.1 Gwydir regulated Water source

The initial assessment identified that there is a risk that environmental outcomes for waterbirds may not be met. This assessment indicates the risk is associated with limitations of delivery of water to the Gwydir Wetlands.

Theme	The *likelihood* that the pattern and volume of flow will support the objectives for each ecological theme							
	Line of enquiry	Very unlikely	Unlikely	About as likely as not	More likely than not	Likely	Very likely	Confidence
Flows and connectivity	LoE 1				●			●●○
	LoE 2				●			●●○
Ecosystem functions	LoE 1				●			●●○
	LoE 2				●			●●○
Waterbirds	LoE 1			●				●○○
	LoE 2			●				●○○
Native fish	LoE 1				●			●○○
	LoE 2				●			●○○
Native vegetation	LoE 1				●			●●○
	LoE 2				●			●●○
Other species	LoE 1				●			●●○
	LoE 2				●			●●○

Figue 3: Initial likelihood assessment of the flows supporting the objectives for ecological themes in Unit. Source: Gwydir (SS22) Initial SDL Assessment Results.

As indicated above the comparison of LoE1 with LoE2 showed no change in any of the ecological themes. This means that any further recovery from the Gwydir under the Basin Plan will not improve outcomes. This is unsurprising as it does not consider the importance of measure beyond volumetric water take. The driver of impact has been identified as pattern of flow, characterised by constraints to river floodplain connectivity.

The Gwydir Valley has played a significant role in returning the Basin to an Environmentally Sustainable Level of Take (ESLT), having met the legislative requirements of the Murray Darling Basin Plan of 42,000 megalitres of LTDLE entitlement for local/instream environmental outcomes and a further 7,600 megalitres for shared contribution to the northern basin. The NSW and Australian Government's hold 54,600 megalitres LTDLE entitlements, 5,000 megalitres more than necessary.

Current Management of Water Source

Gwydir Constraints management as detailed in the Northern Tool kit has not been completed by the NSW Government. This is not a volumetric issue, rather it is an infrastructure issues caused by failure of government.

As indicated previously, we believe that the MDBA should strongly reinforce the requirement that NSW government complete constraints in the Gwydir as required under the Northern Toolkit. Of most importance however this must involve investigation of strategic implementation of infrastructure such as small levees to channel water through private land to the Ramsar sites in the Gwydir.

Critically important to the Gwydir surface SDL is the licencing of Floodplain Harvesting. This process reduced access by 52,900 megalitres. The licences were implemented in August 2022. The NSW government has estimated that the licencing of FloodPlain Harvesting in 2022 would lead to a more than 25% reduction or 100,000ML in floodplain harvesting (that existed prior to licencing) across the northern Basin, per year on average to floodplains, rivers and creeks. As significant volume and time must be given to enable to impacts of this legislative process to take effect.

Request

2. ***MDBA strongly reinforce the requirement that NSW government complete constraints in the Gwydir as required under the Northern Toolkit. This must involve.***
    a. ***Investigation of strategic implementation of infrastructure (including levees to channel water through private land to the Ramsar sites) in the Gwydir.***
    b. ***Proactive work with impacted community members to complete constraints.***
13. ***No changes to Gwydir surface SDL are considered as MDBA assessment indicate that the driver of impact is not volumetric.***
14. ***Users are actively engaged in consultation on the Water source between the MDBA and NSW DCCEEW on SDL's now and at any stage into the future.***

8.2 Lower Gwydir Alluvium

The initial MDBA assessment of the Lower Gwydir Alluvium water source identified it as being of concern that SDL may not support outcomes.

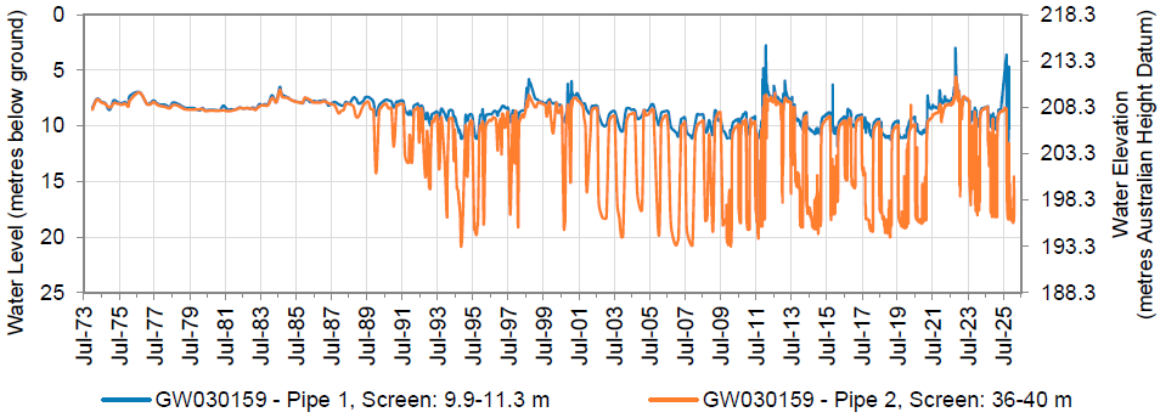
We do Not support this assessment, as the NSW government are closely monitoring drawdown, and have stated that they have no major concerns. The department have also noted that there are isolated sites where there is greater use, that the water source should be managed outside the SDL and the water sharing plan (WSP)[15].

In addition, we note the following:

- The aquifer is very large
- There is high buffering because it takes a long time for changes in recharge to affect overall levels. This means there is low sensitivity to use or changes in recharge.
- Proportion of take to recharge is less than 0.9
- Improvements have been seen in past 12 years

The following graph is a good example, showing recovery when pumping is reduced as seen following above average rainfall 1995,1998 and 1999, then again in 2012 and 2020-2022. The NSW government note that recovery from pumping is a quicker process compared to groundwater rechange.

Figure 3: Example of seasonal pumping drawdowns and recoveries GW030159 (Source NSW DCCEEW 2026) NB: blue line is an unconfined aquifer, and orange line is a semi-confined aquifer



Recharge is a very slow process; the main recharge occurs from the river and flooding, although given the regions clay soils will be slower than in other regions. There are no specific sites in the Gwydir where river water goes directly into the ground water, there would however be several unidentified higher recharge sites along the river. With the semi-confined aquifer recharge will be very very slow as it is much deeper and under pressure below the clay confining bed.

The monitoring by the NSW government has identified that the levels in the Pallamallawa and Royden regions are generally stable as are sites in the Ashley region. South of Ashley there has been increased use since the mid 1980's and decline was observed to 2020, since 2020

[15] Gwydir CAG 17th March 2026

there has been recovery. Sites to the west in Bregeen and Gingham have unconfined aquifer recharging well, and the department is monitoring the semi-confined sites.

Management of this aquifer should be achieved outside of the SDL and WSP. The NSW government have implemented 71T dealings specifically designed to protect the unconfined and the semi-confined aquifers in the water source. Where appropriate trades are assessed for impact.

The Unconfined Impact Assessment Criteria considers the following.

1. Additional drawdown of no more than 10% of the Total Available Drawdown (TAD) above the base of the water source to a maximum of 2 m at any:
    a. 3rd or higher order surface water source, or
    b. Groundwater Dependant Ecosystem (GDE) identified in the water sharing plan, or
    c. Water supply works (excluding those on the same property).

Semi-confined/Confined Impact Assessment Criteria considers the following.

1. Drawdown cannot exceed 40% of the Total Available Drawdown (TAD) in metres below ground level at 200 m from the applicants pumping bore(s).
2. Additional drawdown of not more than 10% of the TAD above the base of the water source to a maximum of 3 metres at any water supply works (excluding those on the same property).

These impact assessments are working well and provide a practical means to manage small area where there may be concerns. The NSW DCCEEW have indicated that they have no major concerns.

Request

15. No change to Lower Gwydir Alluvial SDL as 71T dealing arrangements (trade restrictions) appear to be providing benefit and need to be given time to demonstrate that they are suitable.

16. Support maintaining the existing 71T trade restrictions for the Lower Gwydir Alluvial water source until 2035 (15 years) to enable their impact to be fully appreciated.

a. Request 15 year time frame as the aquifer has low sensitivity to use or changes in recharge.

b. If at time of WSP review (2029) improvement is not being observed. GVIA request detailed consultation with NSW department groundwater team to discuss options.

17. Users are actively engaged in consultation on the Water source between the MDBA and NSW DCCEEW before any changes to management are made.

9 Issues and Options

Within the discussion paper the MDBA presents issues and options under consideration. Following is a summary of the GVIA position on these options.

9.1 Maximise the benefits of water for the environment:

We are supportive of the principle of maximising the benefit and outcomes that are achieved from environmental water. Given that 72 percent of basin river flows are for environmental purposes we agree that environmental water managers should be encouraged to ensure the efficient and effective management of this significant water resource.

Of particular importance to us is a proactive approach to identify practical community supported options to overcome constraints to delivery of environmental water. Floodplain connectivity in our region is being impacted by the lack of delivery of the Gwydir Constraints program as identified in the Northern review. A proactive approach will require a partnership between landholders, environmental water managers and government. There must be strategic conversations and transparent disclosure of potential outcomes achievable from constraint relaxation. There must also be full recognition of the impacts to landholders. We encourage investigation of strategic implementation of infrastructure such as small levees to channel water through private land to the Ramsar sites in the Gwydir that are difficult to reach due to elevation.

There is also value in improving the forecasting of flows for both natural events and those related to the use of HEW. Forecasting is essential to help ensure balanced sharing of the highly episodic flows of the northern basin.

In our region there has been shared information on environmental flows, we encourage this to continue. We would however like to have more transparency on the intensions and the outcomes these flows are intended to or have achieved. This we acknowledge will have a time lag given the complexity of responses for the various environmental outcomes being targeted. This is an important process to avoid the misinformation too frequently appearing on social media on environmental water use and or outcomes. As such we support the proposals to invest in coordinated and transparent environmental water delivery and outcomes reporting.

There may be benefits of exploring ways to support complementary land and water management where it aligns with practical investments such as fish passage, fencing and revegetation of riparian areas, pest animal and weed management. However, any such approach must be effective, and efficient from both a financial and an outcomes oriented perspective.

We believe that environmental water holdings should maintain the same characteristics as the entitlement that was originally acquired, and that environmental water holders should also be subject to the same use rules, metering and compliance requirements, as other entitlement holders are. Critically utilisation of environmental water should not impact on the entitlement characteristics or reliability of other users, nor should it impact the ability of other users to access their water when they want to.

The Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin June 2013, (revised 2017 and 2019) states in Appendix A: Implementation Plan for Measures to Improve Environmental Outcomes in the Northern Murray-Darling Basin, that "*Queensland will work with NSW to develop a rigorous and transparent accounting method to calculate the contribution of held environmental water crossing the Queensland-NSW border and timing of contributions.*" and "*Accounting method supported by protocols and procedures for Queensland-to-NSW cross-border held environmental water will be in place and operating by end 2020.*" We believe this is important. Given that the NSW models do not account for water from Queensland we feel there is an opportunity to enhance the protocols, procedures and

transparency to improve understanding of the efficiency of use of not only HEW but all other water flowing naturally from Queensland into the Barwon Darling in NSW.

Another critical consideration to enable maximum benefits from environmental water holdings is infrastructure upgrades. Of specific concern are Main Weir, Weir 32 and Pamamaroo Inlet regulator at Menindee Lakes. All these structures are negatively impacting on fish health in the system and leading to inefficient management of the water resource at Menindee lakes.

Fixing the Pamamaroo inlet regulator is the first step, and we welcome the fact that there is finally some possible progress with this. This is not about the volume of water, as water quality issues and fish deaths occur in both droughts and floods, it is about system management and the utility of water.

GVIA Request

2. ***MDBA strongly reinforce the requirement that NSW government complete constraints in the Gwydir as required under the Northern Toolkit. This must involve.***
    a. ***Investigation of strategic implementation of infrastructure (including levees to channel water through private land to the Ramsar sites) in the Gwydir.***
    b. ***Proactive work with impacted community members to complete constraints.***

9.2 Responding to native fish decline

Physical barriers constrain water movement and fish passage. At Menindee Lakes fish get stuck between infrastructure (main weir and weir 32) which is not fit for purpose; native fish are unable to move either upstream or downstream when water levels or quality declines. Proposals have been put forward for many years, but no one is willing to address the problem with a practical long term solution. If the MDBA and state governments want to improve native fish in the Barwon Darling, they need to commit to replacing the infrastructure on Main Weir and Weir 32 at Menindee urgently to ensure it is fit for purpose. The need to fix the infrastructure is a position held by fish ecologists such as Ivor Stuart[16]

Many other weirs and structures in the northern basin were offsets to dam safety prior to the basin plan. Governments are responsible for not implementing these offsets and should now be held accountable.

Any proposals associated with flow and connectivity will achieve nothing if the fish remain stuck at sites such as Menindee. Addressing the root cause of the problem should be the priority for the MDBA and governments must be held accountable for their responsibilities to ensure infrastructure is enabling fish movement within the system.

The management of European carp and other introduced species must also be prioritised. We support the release of the carp virus as this species are a significant contributing factor to the health of native fish and water quality. The release of the virus will need to be completed in a

[16] https://soundcloud.com/csu-gulbali-institute/gulbali-report_ivor-stuart?utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing

staged manner to ensure the impacts can be managed efficiently and effectively and that there are not negative impacts on native species. There will also be a need to recognition that the removal of the primary pest will often lead to an explosion of secondary pest species. We support the MDBA intention to closely monitor other invasive fish species including tilapia. Habitat restoration will need to be incorporated in the pest species management strategy.

Request

18. ***The MDBA prioritise investment in infrastructure at Menindee Lakes including upgrading Pamamaroo inlet regulator, installing a gated structure on weir 32 and implementing fish passage on main weir.***
19. ***The MDBA prioritise urgent investment in the implementation of a European carp management program incorporating habitat restoration and monitoring of secondary pest species.***

9.3 Improve floodplain and wetland health

The Gwydir catchment is an inland terminal delta, or closed system. Rivers within the Gwydir diverge into a series of branching channels that distribute their flows across large areas, especially during flood times. Typically, water only reaches outside the valley, into the Barwon River during major (1 in 100 year) flood events, with smaller flows discharged into the two main river channels - the Gingham and Lower Gwydir, where the four Ramsar listed sites are located.

The wetlands are estimated to include approximately 6,829Ha semi-permanent wetland and a further 77,949Ha of floodplain. The extent and condition of the wetland areas are impacted by a range of factors including climatic conditions, land-use, and water supply.

It is not uncommon for wetlands to be dry for extended periods of time, with dry periods typically followed by flooding. Wetlands generally stay wet for a number of years following floods, enabling wetland species to regenerate. We however need to be careful not to keep these sites too wet for too long. River and wetland connectivity in the northern basin is different to the southern basin and care must be taken in ensuring the planning and use of environmental water accurately reflects the regional requirements.

The Gwydir constraints program does need to be completed, as the sustainable rivers audit suggests that floodplain connectivity is being impacted. As already indicated, we advocate for a proactive approach incorporating a partnership between landholders, environmental water managers and government. There must be strategic conversations and transparent disclosure of potential outcomes achievable from constraint relaxation. There must also be full recognition of the impacts to landholders. We encourage investigation of strategic implementation of infrastructure such as small levees to channel water through private land to the Ramsar sites.

Request

2. ***MDBA strongly reinforce the requirement that NSW government complete constraints in the Gwydir as required under the Northern Toolkit. This must involve.***

a. ***Investigation of strategic implementation of infrastructure (including levees to channel water through private land to the Ramsar sites) in the Gwydir.***

b. ***Proactive work with impacted community members to complete constraints.***

9.4 Climate variability

The nationally consistent water management framework established through the NWI, already includes climate mitigation strategies embedded in water management that account for Australia's climatic variability. Managing for climate change is not about ensuring a set of benchmark environmental outcomes in the Basin are continuously achieved. It is about making realistic assessments with the most accurate information available. This is detailed in documents such as the Gwydir Regulated Water Allocation Methodology[17] which accounts for the available resource, future inflows, climate, high priority water users, evaporation and delivery losses. This links with the continuous accounting methodology which has demonstrated that it is fit for purpose, in the highly variable northern basin.

Additionally, references to 'plausible climate futures', must include both wetter and drier periods, as well as acknowledge the significant uncertainty in modelled projections. Models are only as good as the assumptions and information used in any analysis. We are concerned that assumptions and data used to inform model runs can be adjusted to deliver desired outcomes. We request that whenever models are used to inform government decision making for water management that all assumptions and data are presented with the model findings, and if necessary, the modeller is available to present the model with assumptions.

Request

20. Climate change policy must support adaptation rather than impose prescriptive reductions in water reliability and allocations.

9.5 Water infrastructure and critical human water needs

Improvements to water infrastructure will be important if the Basin Plan is to effectively support a healthy working basin. The health of native fish in the Barwon Darling is dependent on upgrades to Menindee Lakes. Weir 32 and main weir must be upgraded to be fish friendly.

Given that climate change and critical human needs are factored into existing water sharing arrangements, through water sharing policies, water allocations, and in the setting of extraction limits, we need to support local councils to proactively utilise the water available to them as efficiently and effectively as possible. To enhance critical human needs, local government must be supported to look at local solutions, including infrastructure (storage dams, weirs, pipelines, tanks), secondary supply sources, water recycling or desalination. This approach will help secure towns more reliable water when our rivers stop flowing due to drought. This is especially important in highly variable ephemeral river systems as exist in the northern basin. It is not possible to ensure these rivers flow constantly.

[17] Water Allocation Methodology - Gwydir Regulated River - November 2021

Request

18. ***The MDBA prioritise investment in infrastructure at Menindee Lakes including upgrading Pamamaroo inlet regulator, installing a gated structure on weir 32 and implementing fish passage on main weir.***

21. ***The MDBA actively support diversification of alternative water supplies to enable water security in highly variable ephemera river systems. This must include support for state and local government programs necessary to fund strategic investment in water security for regional communities.***

9.6 Improve Basin Plan regulatory design

There is opportunity to simplify the design of the Basin Plan, including consideration of whether a Water Resources plan is needed when the state based Water Sharing Plans develop a framework for the sharing of resources. Unique features such as LTDLE factors could be documented in a reference document.

We believe there is potential to have more timely and clearly articulated information on SDL compliance to build confidence and prevent misinformation. There is also a need to report both underutilisation of water as well as over utilisation.

There is a need to establish improved accountability of the management and use of HEW. Given this water was purchased with public money the Australian and NSW tax payer has a right to know how the water is being used. There is also a need to provide much better monitoring and distribution of the outcomes achieved from both HEW and planned environmental water.

We have experienced far too many instances of rules based changes, a mechanism frequently used by Basin-states to amend WSPs as opposed to managing impacts to the consumptive pool via the agreed processes from the NWI, such as the Risk Assignment Framework. At present, there is no accountability on Basin States who do this, despite impacts to water users' reliability. A process to identify impacts, account for them, and ensure Basin States are following NWI commitments, is critical to both industry and the CEWH.

The basin states must be held accountable for their role in the delivery of a healthy working basin and in adhering to the principles of The Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin June 2013, (revised 2017 and 2019). Failure to work in partnership with landholders to deliver constraints or imposing rules based changes for policy amendments in a bid to avoid compensation under the risk assignment framework should not be acceptable.

9.7 Improve science and knowledge to inform Basin water management

There is in principle support to build understanding of the complexities and interactions of environmental, economic, and social outcomes in the Basin through sustained research capacity, community involvement, and a greater focus on science synthesis, collaboration and communication.

There is a significant need to enhance the focus on socio-economic impacts on agricultural productivity and community. This must be regionally focused to present a true indication of

impacts. Socio economic assessments as completed in the Northern Basin Review should be seen as a minimum standard for assessing impacts of water recovery on community.

Full cost benefit analysis should be completed for any water recovery proposals and must be comprehensive including but not limited to determining the initial or base entitlement value, assessing reduction in water allocations and reliability, estimating the reduction in entitlement value and assessing any other impacts.

There is opportunity to improve river flow monitoring, availability and the interactions with ecosystems and climate. We however need to reinforce that climate change is already factored into existing water sharing arrangements and setting of extraction limits.

Request

22. ***Improved socio-economic assessments of costs and benefits of proposals be mandated to include assessments of Socio-Economic Indexes for Areas (SEIFA) and community viability.***
23. ***A comprehensive cost benefit analysis be completed for any water recovery proposals.***

9.8 Resolution to Basin Plan 1.0

We support the concerns raised by National Irrigators Council (NIC) and NSW Irrigators Council (NSWIC) with regard the targeting of volumetric water recovery associated with 450 GL and the SDLAM shortfall, expected to be around 300GL. The NIC review of additional HEW[18] We do not believe that continuing to recover additional HEW, without constraints relaxed, is not appropriate. The Government's own environmental science finds flow-based indicators performing well but non-flow-based indicators scoring more poorly. This supports the need to focus on community-supported constraints and complementary measures, as a higher priority than additional water recovery. Spending under the 450 GL program does not reflect the Government's own science on priorities for environmental investment in the Basin. The SDLAM and 450GL programs are no longer priorities, investment must shift to addressing the driver's limiting achievement of environmental outcomes, such as complementary measures like control of European Carp and community supported constraints that will optimise the efficiency of environmental water deliveries.

9.9 Conclusion

Water reform and adjusting the consumptive and environmental balance of flows in the Murray Darling Basin had been going for more than thirty years. There is now more that 75% of flows in our region for environmental purposes. We must focus on ensuring that this water is utilised as efficiently and effectively as possible to delivery environmental outcomes. There is a need to better communicate to how environmental water is being utilised, what the intended outcomes are and for there to be enhanced monitoring of what is being achieved.

Misinformation on environmental water use in the basin is having significant impacts on the mental health of entitlement holders. The MDBA and CEWH have a role to play in correcting

[18] https://www.irrigators.org.au/policy/murray-darling-basin-plan/review-of-additional-hew/

the messaging to protect the well being of communities across the basin. They also have a role to play in communicating the significant success of the basin plan since it was established in 2012. Irrigation is significantly important to basin communities and the GDP of the regions. Entitlement holders need stability so they can continue to play their role in the viability of the basin.

Accepting that we have the balance right is critical, there is no need for additional water recovery, now we need to ensure the environmental water can be delivered where it is needed, and that the infrastructure in the basin is not negatively impacting native fish. This is why we are pushing strongly for the biggest impactor on fish health on the Barwon Darling, Menindee lakes to have infrastructure upgrades.

10 About the GVIA

10.1 Our region

The Gwydir Valley Irrigators Association (GVIA) represents more than 450 water entitlement holders in the Gwydir Valley, centred around the town of Moree in North-West New South Wales. Our mission is to build a secure future for members, the environment and the Gwydir Valley community through irrigated agriculture.

The Moree Plains Shire region alone is highly dependent on agriculture and irrigated agriculture for economic activity contributing over 72% of the value of gross domestic product (cotton is around 60%), employing 20-30% of the population and accounting for almost 90% of exports from the Shire[19].

The 2011 agricultural census estimates that the total value of agricultural commodities for the Moree Plains Shire region was $911,951,079 up from $527,744,851 in the 2005-06 census. This is an estimated 7.83% of NSW's total agricultural production from a 1,040,021Ha principally used for agricultural crops[20].

The Gwydir is characterised as having low water reliability with most water held as general security water with a reliability of 36% (i.e. in the long-term just over a third of entitlement can be accessed). Supplementary water entitlement is somewhat more reliable with 55% but accounts for less than a quarter of the total volume. Groundwater reliability is considered 100% but there is less than 30,000ML available. Floodplain harvesting licences were issued in 2022, significantly reducing access for the region, and contribute almost a quarter of the water use in the region over the long term. However, access is episodic, in line with moderate to major floods.

[19] Cotton Catchment Communities CRC Communities and People Series 2009

[20] 2010 2011 Agricultural Census Report – agdata cubes, 71210D0005-201011 Agricultural Commodities, Australia

The Gwydir has had more environmental water recovered than required by the Murray Darling Basin Authority modelling and legislation. There is an additional 5,000 megalitres of water owned by Government's above the legislated amount for our region[21].

As a result of water reform, only approximately 19% of the total river flows are available for diversion for productive use[22]. This equates irrigators holding 575,000ML from regulated entitlement (high security, general security and supplementary water) and 28,000ML available from groundwater aquifers.

The reform was difficult as regional communities such as those of Collarenebri and Moree were forced to adjust to a region with less water, and less capacity to recover from droughts. The impacts of the reforms are still evident in these communities.

Changes in water availability either through climate or government policy has a direct impact on the productivity of the region and the local economy. Analysis by the Murray Darling Basin Authority highlighted this relationship during the northern review and revealed that for both Moree and Collarenebri social and economic indicators declined through 2001 to 2011 including education, economic resources and disadvantage, resulting in an estimated 200 jobs lost due to the implementation of the Basin Plan in the region[23]. We are currently seeing this impact play out with ongoing social issues in our region.

10.2 Our region's hydrology and geomorphology

The Gwydir River is an inland terminal river network classified as "distributary" network by the Murray Darling Basin Commission during water sharing plan development. The rivers become a series of branching channels that distribute flows across large areas especially during floods (MDBC, 2007a). This distribution of water represents the watercourse areas of Gwydir Wetlands. There are four parcels of land within the Gwydir Wetlands listed under the Ramsar Convention on Wetlands (MDBA, 2010c).

This natural geomorphology means the Gwydir River under natural conditions would have a very low ability to contribute to surrounding catchment inflows. The State of The Darling Interim Hydrology report puts the average percentage flow of the Darling River from the Gwydir River to be 12%, although updated estimates have this percentage between 8- 7%

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[21] The Gwydir Valley has met the legislative requirements of the Murray Darling Basin Plan of 42,000 megalitres of LTDLE entitlement for local/instream environmental outcomes and a further 7,600 megalitres for shared contribution to the northern basin. The NSW and Australian Government's hold 54,600 megalitres LTDLE entitlements. Based on IQQM long-term modelling and the volume of water purchased for the environment

[22] Based on IQQM long-term modelling and the volume of water purchased for the environment

[23] Refer to the Murray Darling Basin Authorities Socio Economic condition reports, Social and Economic Analysis of the Moree Community, 2009. Cotton Catchment Communities CRC

630-nbr-community-profile-moree-hr.pdf (mdba.gov.au)
https://www.mdba.gov.au/sites/default/files/publications/630-nbr-community-profile-collarenebri.pdf

as reported in the Independent Assessment of the 2018-19 Fish Deaths in the Lower Darling. The low contribution, which is consistent with other terminal wetland systems, is a result of most of the water within the system flowing naturally towards the terminal wetlands and watercourse.

The natural hydrology has been altered via modification of the river and operations with an increase in end-of-system connectivity. This channelisation and re-regulation occurred throughout the last century to initially deliver regular stock and domestic water supplies to users and then to deliver irrigation water more efficiently. Flows are now regulated down the Mehi, Moomin and Carole, which can now join the Barwon River. However, even with these modifications there remains limited capacity to move water through these systems with channel constraints limiting the daily flows.

10.3 What we do

The GVIA's mission is to build a secure future for our members, the environment and the broader Gwydir Valley community through irrigated agriculture, we do this together by making every drop count in the river or the aquifer, on-farm, for the environment, or for our community[24].

GVIA members hold entitlements within the Gwydir regulated and unregulated surface water areas, in addition to groundwater resources. All of which are managed through water sharing plans, which have been progressively developed since early 2000.

The GVIA organisation is voluntary, funded by a nominal levy, cents/megalitre on regulated, unregulated and groundwater water entitlement. The levy is paid and supported on average by 85% of the eligible entitlement (excludes NSW and Commonwealth entitlement).

The Association's primary activities revolve around negotiating with government at a Federal, State and Local level to ensure equality and the rights of entitlement holders are maintained and respected. The core activities of the Association are funded entirely through the voluntary levy, the Association does however undertake programs and projects to maintain and improve the sustainability of members on-farm activities, which can be funded by government or research corporations.

The Association is managed by a committee of a minimum 11 entitlement holders and employs a full-time executive officer and a part-time administrative assistant, as well as hosting a Project Officer funded through the Cotton Research and Development Corporation, the Gwydir Valley Cotton Growers Association and the GVIA.

10.4 Contacts

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[24] For more information, see our corporate video on https://vimeo.com/177148006

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