

---

## SUBMISSION

# **Draft critical dry condition triggers to reduce risk to environmental and human water needs**

Connectivity Stakeholder Reference Group

December 2021



## NSW Irrigators' Council

The NSW Irrigators' Council (NSWIC) is the peak body representing irrigation farmers and the irrigation farming industry in NSW. NSWIC has member organisations in every inland valley of NSW, and several coastal valleys. Through our members, NSWIC represents over 12,000 water access licence holders in NSW who access regulated, unregulated and groundwater systems.

NSWIC members include valley water user associations, food and fibre groups, irrigation corporations and commodity groups from the rice, cotton and horticultural industries. NSWIC engages in advocacy and policy development on behalf of the irrigation farming sector. As an apolitical entity, the Council provides advice to all stakeholders and decision makers.

NSWIC welcomes this opportunity to provide a submission as part of our representation on the Connectivity Stakeholder Reference Group, in response to the '*draft critical dry condition triggers to reduce risk to environmental and human water needs*'.

## Irrigation Farming

Irrigated farming provides more than 90% of Australia's fruit, nuts and grapes; more than 76% of its vegetables; 100% of its rice and more than 50% of dairy and sugar (2018-19).

Irrigation farmers in Australia are recognised as world leaders in water efficiency. For example, according to the Australian Government Department of Agriculture, Water and the Environment:

*"Australian cotton growers are now recognised as the most water-use efficient in the world and three times more efficient than the global average"*<sup>1</sup>

*"The Australian rice industry leads the world in water use efficiency. From paddock to plate, Australian grown rice uses 50% less water than the global average."*<sup>2</sup>

Our water management legislation prioritises all other users before agriculture (critical human needs, stock and domestic, and the environment with water to keep rivers flowing), meaning our industry only has water access when all other needs are satisfied. Our industry supports and respects this order of prioritisation. Many common crops we produce are annual/seasonal crops that can be grown in wet years, and not grown in dry periods, in tune with Australia's variable climate.

Irrigation farming in Australia is also subject to strict regulations to ensure sustainable and responsible water use. This includes all extractions being capped at a sustainable level, a hierarchy of water access priorities, and strict measurement requirements.



## Contents

NSW Irrigators' Council.....	2
Irrigation Farming .....	2
Foreword.....	3
Submission.....	6
1) Recognition of the Darling River as ephemeral .....	6
2) Recognition that dry periods are important for this environment.....	7
3) Rules based approaches are needed instead of S324s.....	8
4) Focus needs to turn to when restrictions are lifted .....	9
5) Measures already in place must be recognised.....	10
6) Management of Menindee Lakes.....	11
7) Other .....	12
Conclusion .....	13
Appendix 1.....	13

## Foreword

This submission was prepared on behalf of two of the representatives on the Connectivity Stakeholder Reference Group:

- Jim Cush (NSW Irrigators' Council)
- Ian Cole (Barwon-Darling Water).

This submission provides feedback on the draft Discussion Paper, and initial feedback on the proposed triggers outlined below:

A, B and C class access in the Barwon–Darling water sharing plan, floodplain harvesting in the Barwon–Darling and in northern valleys, supplementary access in the northern tributaries and large unregulated river access on the lower northern valleys would be restricted when:

- there is likely to be a cease-to-flow period of 120 days at Wilcannia, especially in spring-summer
- Menindee Lakes falls below 195 ggalitres
- the Barwon–Darling River is classified as Drought Stage 4 Criticality.

If any of the above conditions is met, access would be restricted if:

- flows are forecast to occur
- forecast flows will meaningfully contribute to meeting the targets.

If the northern tributaries are in Drought Stage 4 Criticality (regardless of whether the above triggers are met), a section 324 restriction may also be placed in these systems until flow recovers.

**Table 2. Draft critical dry condition operational triggers for the lower Baaka–Darling River**

River Section	Flow reference gauge	Dissolved oxygen trigger <sup>2</sup>	Blue–green algae trigger <sup>3</sup>	Monitoring duration and frequency
Weir 32	Darling River upstream Weir 32 425012	Initial alert notification at 50% saturation or 5 mg/L Critical ecological threshold alert level 3 mg/L	Amber Alert algae recreation guideline of 0.4 to 4 cubic millimetre per litre or announcement of an Amber alert warning	October–March Real-time continuous monitoring of dissolved oxygen and water temperature at multiple depths. Weekly monitoring of blue–green algae <sup>4</sup>

<sup>2</sup> Native fish and other large aquatic organisms requiring at least 2 mg/L of dissolved oxygen to survive but may begin to suffer at levels below 4 to 5 mg/L (Gerhke 1988).

<sup>3</sup> This is based on Chapter 6 of the National Health and Medical Research Council guidelines for managing risk in recreational water (NHMRC 2008).

<sup>4</sup> Based on the recommendations for effective monitoring of pool stratification outlined in Baldwin (2019, 2020)

Pooncarie	Darling River at Pooncarie 425005	Initial alert notification at 50% saturation or 5 mg/L Critical ecological threshold alert level 3 mg/L	Amber Alert algae recreation guideline of 0.4 to 4 cubic millimetre per litre or announcement of an Amber alert warning	October–March Real-time continuous monitoring of dissolved oxygen and water temperature at multiple depths. Weekly monitoring of blue–green algae
Burtundy	Darling River at Burtundy 425007	Initial alert notification at 50% saturation or 5 mg/L Critical ecological threshold alert level 3 mg/L	Amber Alert algae recreation guideline of 0.4 to 4 mm <sup>3</sup> /L or announcement of an Amber alert warning	October – March Real-time continuous monitoring of dissolved oxygen and water temperature at multiple depths. Weekly monitoring of blue–green algae <sup>4</sup>

In general, Section 324 embargoes are a last resort, at ministerial discretion, to suspend rules in Water Sharing Plans (WSPs).

Meanwhile, WSPs are the instruments that have been developed with a wide cross-section of stakeholders for every water source, to outline the rules clearly and transparently.

The exercise of ministerial discretion as a last resort should never be taken lightly and should only be considered at times of extreme distress in river communities.

We agree with the Minister having the power to put in place an S324 in truly exceptional circumstances, where such a decision could genuinely and meaningfully result in water going to critical needs, when it otherwise would not under the WSP. Under our core principles we respect the prioritisation of water in the legislated hierarchical framework.

However, WSPs should (and do) cater for a broad range of scenarios, to provide clear rules (developed properly and not during highly emotional periods of drought, which is distressing enough). This relieves the need for S324s in all but highly exceptional circumstances. Under existing rules in WSPs, access to water by irrigators is already heavily or completely restricted in such critical periods.

Rather than relying on, or normalising, the suspension of WSPs through S324s, focus instead must be on ensuring WSPs are effective in the broadest range of scenarios. Best practice water management is surely not developing management plans through lengthy consultative and scientifically informed formal processes, only to switch the plans off at the times they are needed most (to provide clear, transparent, and properly developed rules).



Putting an S324 in place under such circumstances undermines the entire process of the development, and review, of the WSP (and WRP). Rules are developed, analysed, researched, modelled, subject to public consultation, and sent to the MDBA for further review and approval. The WSP is also subject to regular statutory reviews by independent authorities. An S324 puts all these safeguards aside and allows political discretion (often during times of stress and emotion) to override rational decision-making and due process.

We support the findings of the Independent Assessment of the management of the 2020 First Flush Event, which recommended that the management of first flush events be embedded within the regulatory framework.

We do not believe the propositions contained in the draft Discussion Paper achieve that objective, as they:

- (i) Fail to consider the protocols for lifting restrictions (which was the most critical shortfall in the management of the 2020 event, with the goalposts constantly shifting), and
- (ii) Simply rely on suspending the WSP, which presents several significant problems (a rules-based approach is required).

So, while the draft Discussion Paper provides detail on the application of restrictions, the key recommendation of this submission is that equal detail must be provided on the lifting of restrictions (which is the most critical component).

As part of this process, government must learn the lessons from managing the 2020 first flush event. During that event, a S324 was applied to suspend WSPs, as the northern Basin slowly emerged from a desperately dry four-year period. Droughts do not break overnight: over a period of two months, flows gradually increased with the result that water flowed through to Menindee Lakes and enabled irrigators in the Lower-Darling to receive a 30% general security allocation – a very good result, attributed to the fact that it rained.

As part of the review of that event's management, the counterfactual was made for what would have happened had an S324 NOT been in place, and if NSW had abided by its WSPs (like Queensland did). The answer is an insignificant and immaterial difference to flows, but a big impact on upstream water users (particularly supplementary licence holders).

It has been disappointing throughout this connectivity stakeholder panel to witness such significant denial of facts and science, including rejection of the ephemeral nature of our largely unregulated northern river systems.

It is quite fanciful that a river system with no regulating large headwater storages; a vast, flat, hot, dry and windy landscape with no snow-capped alpine mountains at its top; and, a climate characterised by extremes of drought and flooding – could ever be conceived to be constantly flowing. The discussion paper must be very clear on the indisputable natural history of these unregulated, ephemeral river systems, and the risks of changing that nature.

We do not support propositions to fundamentally change the natural flow regime of this ephemeral system because this objective is:

- Not feasible in an unregulated system with no headwater regulating infrastructure, and sets false and unachievable expectations, which would only further erode confidence when those expectations are inevitably not met.
- Ecologically harmful as it fails to recognise the natural flow regime of the system, including the ecological importance of the dry cycles.
- Damaging to productive water users and communities throughout the system, with serious socio-economic implications from lost water access.

To elaborate on this final point, we have been informed that the volume of water required to regulate the Barwon-Darling River equates to the equivalent of the total general security and



supplementary entitlements in the Namoi valley. Think about this for a moment: the equivalent volume of all surface water use in the Namoi valley would need to be removed from consumptive use, with devastating social and economic impacts, in order to cause ecological harm in another valley by removing its natural dry cycles. And this could only be achieved by building more and larger dams in the headwaters of the Barwon-Darling tributaries. That is surely not a desirable outcome for any stakeholder.

It is notable that Dorothea McKellar came from the Namoi valley. Droughts and flooding rains are a part of Australia, and our irrigation industry has been developed to survive that boom-and-bust cycle. Irrigation does not cause droughts, nor is further restricting irrigation water (in dry times when irrigation is already heavily or fully restricted) a ‘solution’.

It is troubling to hear people stoke division by arguing that ‘*my drought was worse than yours*’ – when the recent severe drought had such devastating outcomes for all communities in the Basin, irrigators too. We should all be working together to look at how droughts can best be managed – we cannot ‘cure’ drought by restricting water access by irrigators at times when they already largely do not have any water either.

If climate change means extended periods of low or no flow, then it is necessary to look at options to secure town water supplies through measures such as secondary sources or new and improved infrastructure.

Ultimately, we advocate for fair and reasonable rules-based approaches to ensure WSPs are effective in the broadest range of scenarios, but we do not support unachievable and undesirable objectives to change the natural flow regimes in ephemeral and unregulated river systems.

## Submission

### 1) Recognition of the Darling River as ephemeral

It is remarkable that some individuals claim, contrary to the available science and historical accounts, that the Darling River is not ephemeral, and thus blame dry and cease-to-flow periods on irrigation.

DPIE-Water has made abundantly clear that:

*“A constantly flowing river is not normal for the Barwon-Darling region. The river stopped flowing for extended periods even before there were large dams and significant agricultural water use upstream.”<sup>1</sup>*

It would therefore be unrealistic and unachievable to put in place any triggers aimed at changing the natural ephemeral nature of the system. Not only would such triggers never be able to meet these individuals’ objective of a constantly flowing river (as no trigger can fundamentally transform the natural river state), but it would create unrealistic expectations which would only further erode confidence given the river would still run dry in droughts.

This is consistent with the recommendations from the Independent Assessment, which states:

*“Connectivity must be a primary objective of first flush management in the Northern Basin if insufficient water is available to meet tributary and downstream critical water needs. However, the arrangements to meet downstream critical water needs, **of necessity**, also*

---

<sup>1</sup> [https://www.industry.nsw.gov.au/data/assets/pdf\\_file/0010/404668/river-flows-and-climate-over-time.pdf](https://www.industry.nsw.gov.au/data/assets/pdf_file/0010/404668/river-flows-and-climate-over-time.pdf)



have to be **reflective of and responsive to the ephemeral and intermittent flow nature of the rivers in the Northern Basin.**<sup>2</sup>

**Recommendation:**

The natural ephemeral state of the Darling and northern Basin rivers must be recognised, clearly communicated in the Discussion Paper, and factored into decision-making.

DPIE-Water must actively counter claims to the contrary that reject the science and history of this river system.

2) Recognition that dry periods are important for this environment

We have significant concerns that some stakeholders do not appreciate the ecological importance of dry periods and want to make the rivers flow contrary to their natural state. It appears these stakeholders want to regulate an unregulated river and attempt to create a continually flowing river but without the infrastructure in place to do so. It is important to note that even regulated rivers need drying cycles.

It should not be seen as ecologically desirable to seek to remove dry cycles from the Darling. There is significant scientific literature and reports which discuss how the ‘boom and bust’ cycle is ecologically important. For example:

*“It may appear that variable flows have largely negative effects, when considered in the context of agricultural production and that ‘permanent is better’. However, **river systems with highly variable flow regimes are different and call for a different approach to their management** (Boulton et al. 2000)”<sup>3</sup>*

Gawne and Scholz (2006) wrote that a “loss of a dry phase has led to significant changes”<sup>4</sup> with increased abundance of non-native fish and vegetation communities such as lignum and river red gums being reduced.

In *Vegetation of Australian Riverine Landscapes: Biology, Ecology and Management*<sup>5</sup>, Capon, James & Reid (2016) note that:

*“In some places in Australia, increased flooding has dramatically affected riverine vegetation through the permanent inundation of wetlands and river channels, by re-regulating storages or because low flows constantly connect them to the river. Riparian trees, while dependent on periodic flooding, die under conditions of permanent inundation as demonstrated by the many dead trees present in lakes of regulated rivers (e.g., Menindee Lakes...). River red gums die when their base is submerged for 2-4 years...”<sup>6</sup>*

The loss of a dry phase was also brought to attention as part of The Living Murray program:

<sup>2</sup> [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0007/321649/final-report.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0007/321649/final-report.pdf)

<sup>3</sup> [https://www.mdba.gov.au/sites/default/files/archived/mdbc-tlm-reports/525\\_menindeelakesdarling.pdf](https://www.mdba.gov.au/sites/default/files/archived/mdbc-tlm-reports/525_menindeelakesdarling.pdf)

<sup>4</sup> Synthesis of a new conceptual model to facilitate management of ephemeral deflation basin lakes, Ben Gawne and Oliver Sholz (2006). *Lakes & Reservoirs: Research and Management*.

<sup>5</sup> *Vegetation of Australian Riverine Landscapes: Biology, Ecology and Management* Ed. Samantha Capon, Cassandra James and Michael Reid (2016), CSIRO publishing.

<sup>6</sup> *Vegetation of Australian Riverine Landscapes: Biology, Ecology and Management* Ed. Samantha Capon, Cassandra James and Michael Reid (2016), CSIRO publishing. Available here: [https://books.google.com.au/books?id=oBrYCwAAQBAJ&pg=PT434&lpg=PT434&dq=river+red+gums+menindee+die+back&source=bl&ots=OqivIuOdoT&sig=ACfU3U119NLx1fiXHHMrbV8TOWZ\\_4D-rZA&hl=en&sa=X&ved=2ahUKEwiEoa6GrLTyAhVNeHoKHSmcC-wQ6AF6BAgiEAM#v=onepage&q=river%20red%20gums%20menindee%20die%20back&f=false](https://books.google.com.au/books?id=oBrYCwAAQBAJ&pg=PT434&lpg=PT434&dq=river+red+gums+menindee+die+back&source=bl&ots=OqivIuOdoT&sig=ACfU3U119NLx1fiXHHMrbV8TOWZ_4D-rZA&hl=en&sa=X&ved=2ahUKEwiEoa6GrLTyAhVNeHoKHSmcC-wQ6AF6BAgiEAM#v=onepage&q=river%20red%20gums%20menindee%20die%20back&f=false)



*“The combination of weir pools and the stock and domestic release along the Darling Anabranch has substantially changed the localised environment by **preventing long sections of the channel from drying for months to years between floods**. Permanent inundation of the Menindee Lakes significantly reduced the frequency of drying in the main lakes. Permanent inundation favours different vegetation communities, leads to sedimentation and channel incision and promotes favourable conditions for carp. It alters the relationship between surface water and groundwater and can lead to increased salinity in surface waters. Permanent inundation disrupts the pattern of flooding and drying in dryland rivers and associated boom and bust cycles in waterbirds (Kingsford et al. 2002) and fish.....)”<sup>7</sup>*

There are also significant lessons to be learnt from the development of the Murray River, which prior to significant infrastructure developments and regulation, also ceased to flow. The constant high flows in the Murray River are now often criticised for the negative impacts on bank erosion, sedimentation and salinity. The MDBA says:

*“Erosion of the riverbank is a natural process but in a river like the Murray, over time people have adjusted the natural pattern of flow to meet the needs of industries and towns, which can increase erosion and change the river formation.”*

*“A range of factors can influence erosion, including sending large volumes of irrigation water through the river in summer when flows would be naturally lower and riverbanks drier. Making dry riverbanks wet in summer can cause more erosion than when the banks are already wet in winter.”<sup>8</sup>*

Whilst there is a critical desire for constant water supplies for stock and domestic purposes, this can be considered a separate issue, particularly when we acknowledge that at times there will be no water at all. Governments should therefore address this issue separately, such as through greater investment in town water services, secondary water supply options, etc.

### **Recommendation:**

NSWIC recommend that the Discussion Paper includes analysis of the environmental impacts of fundamentally altering the natural ephemeral regime of the Barwon-Darling.

It should not be seen as ecologically desirable to seek to remove dry cycles from the Darling.

The development of connectivity objectives, and any proposed management regime, must consider this.

### 3) Rules based approaches are needed instead of S324s

We are concerned that the draft triggers are for “*initiating temporary water restrictions under section 324 of the Water Management Act 2000*”.

S324s are designed only to be used in the most exceptional circumstances which go beyond the management scope or capacity of the Water Sharing Plan (WSP). The WSP should be capable of managing for a broad range of possible scenarios, with clear rules in place to deal with even extreme events – in a clear, transparent, and predictable manner.

Government should not normalise the practice of suspending WSPs, but rather, develop WSPs that can operate effectively, transparently and predictably in the broadest range of scenarios.

<sup>7</sup> [https://www.mdba.gov.au/sites/default/files/archived/mdbc-tlm-reports/525\\_menindeelakesdarling.pdf](https://www.mdba.gov.au/sites/default/files/archived/mdbc-tlm-reports/525_menindeelakesdarling.pdf)

<sup>8</sup> <https://www.mdba.gov.au/community-updates/why-erosion-occurring-river-murray-particularly-through-barmah-choke>





This ensures rules are transparent and predictable, and not subject to ad hoc decision-making or political discretion.

This is consistent with the Independent Assessment of the First Flush event in 2020, which recommended:

*“Embed the management of first flush events in the regulatory and policy framework for managing drought.”*

The First Flush Independent Panel recommendations include specific examples of where management arrangements should be embedded, including in the Water Management Act, Extreme Events Policy, WSPs, and Incident Response Guides.

The recommendation of the Independent Assessment relating to the use of S324s was only intended to be in the interim until such arrangements were embedded in the framework. Specifically, the relevant recommendation from the Independent Assessment states:

***“Until there are further provisions for first flush event management embedded in the regulatory and policy framework, publish guidance materials which outline how the NSW Government will use temporary water restrictions to manage first flush events.”***

Given the climatic shift to La Nina, with significant rainfall and flooding, full dams and rivers, and widespread water availability across the Basin, there is time to properly develop rules to be embedded within the framework without resorting to S324s.

The shift to La Nina has removed the urgency. A first flush would require current high rainfall conditions to end, drought conditions to return, water supplies to run low, and then, the drought to be broken by a first flush – all of which takes several years. This window of opportunity created by La Nina should make redundant the need for ‘urgent’ interim measures and allow time for DPIE-Water to properly develop rules-based approaches.

Consistent with the recommendations of the Independent Assessment, we believe that the NSW Government should be seeking options to embed first flush management in the policy framework. This is entirely preferable to developing proposals for S324s, which were always intended to be an interim strategy.

An additional problem with relying on the S324 is that current models are ineffective in accounting for S324s, as shown in the recent MDBA SDL Compliance Report.

This created a perception of non-compliance, simply because the models did not reflect the fact that the WSP was suspended (along with other factors).

This creates inaccuracies (or at best inefficiencies), in water accounting. Additionally, properly accounting for such restrictions through modelling would provide a more representative indication and thus fairly show possible access opportunities at later (wetter) times.

***Recommendation:***

NSWIC recommends rules-based approaches are developed, rather than reliance on S324s.

[4\) Focus needs to turn to when restrictions are lifted](#)

While the draft Discussion Paper details the triggers for the commencement of restrictions, there is scarce information on triggers for the lifting of restrictions. This is a critical point.



As shown through the Independent Assessment, this was a major shortfall in the management of the 2020 First Flush Event, as the goal posts for removing restrictions kept changing. The Final Report states:

*“All of this contributed to a lack of trust and a strong view that the ‘goal posts’ were shifted during the event.”*

As shown through this Independent Assessment Final Report, decisions around temporary lifting of these restrictions and then their maintenance as a later response to criticism, meant that industry and the northern upstream region communities forfeited 100,000 megalitres of supplementary take, transferring this downstream and resulting in allocations in the Lower Darling.

The overall outcomes in terms of downstream water flows were more than double the desired target.

We thus are of the position that the lifting of restriction requires greater attention.

We believe that consultation with the water users in all the impacted valleys is required on this matter to develop such options.

As key principles, if any of the proposed targets eventuate:

- There must be an ‘except’ provision that considers conditions in the local valley, and lifts restrictions if certain conditions are met. This is consistent with the precedent of principles applied by agencies when considering lifting restrictions<sup>9</sup>. Put simply, a valley target should not depend on an end of system target.
- Channel capacity and existing water sharing rules must be considered, particularly in the formation of rules that lift restrictions.
- Measures must have regard to local environmental sites – such as the Ramsar-listed Gwydir Wetlands and Macquarie Marshes. Such sites should not be bypassed in order to meet end of system targets.

***Recommendation:***

NSWIC recommends consultation with the impacted valleys to develop options for the **lifting of restrictions** – having regard to local conditions, channel capacity, and existing water sharing arrangements.

### 5) Measures already in place must be recognised

We note already significant connectivity measures are in places across the northern Basin. These are outlined in the “*Stocktake of Northern Basin connectivity water management rules*”.<sup>10</sup>

Existing connectivity rules include:

- End of system flow rules
- Long-term average annual flow (LTAAF)
- Supplementary water sharing rules
- Environmental Water Allowances (EWAs) or Releases
- Held Environmental Water

<sup>9</sup> [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0015/301416/northern-basin-restriction-triggers-and-principles-fact-sheet.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0015/301416/northern-basin-restriction-triggers-and-principles-fact-sheet.pdf) [P 6].

<sup>10</sup> [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0019/356032/stocktake-of-northern-basin-connectivity-water-management-rules.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0019/356032/stocktake-of-northern-basin-connectivity-water-management-rules.pdf)



- Flow classes and cease-to-pump and commence-to-pump rules
- Interim Unregulated Flow Management Plan for the North West (IUFMPNW)

This is in addition to valley-specific rules, such as the Resumption of Flow and Individual Daily Extraction Components in the Barwon-Darling.

We are concerned that:

- The draft Discussion Paper does not adequately reflect the extent of measures already in place. Existing measures are poorly understood by many stakeholders, which is a large driver of many stakeholders calling for measures of this kind to be ‘introduced’.
- There is little information regarding how the proposed measures will interact with existing connectivity measures.
- There has been no assessment of the cumulative impacts of water reforms on water users – which is particularly important for users which have only recently faced new connectivity rules (such as those in the Barwon-Darling with the Resumption of Flow rule and the late introduction of IDECs).

***Recommendation:***

We recommend that an impact assessment is conducted to provide information on the relative impact of any new proposals compared to the outcomes already achieved under existing rules.

We recommend that the Discussion Paper include more details on the extent and effect of existing connectivity measures.

## 6) Management of Menindee Lakes

Whilst NSWIC recognises the importance of water in Menindee Lakes, we are concerned by the practicalities of using water in storage at Menindee Lakes as a trigger, given the numerous drivers that determine the volume of water in storage, complex governance arrangements and multiple parties that control the volume.

All of these drivers are out of the control of everyone above the Menindee Lakes.

The Menindee Lakes have a complex governance architecture, being jointly managed by the MDBA and NSW, the latter taking control when total water storage drops below 480GL, and the former taking charge when the volume is more than 640GL).

A significant portion of water in the Lakes is also owned by environmental water holders, and thus is subject to their decision-making. NSWIC does not see that water access by upstream water users should depend on the decisions made by multiple parties managing the volumes held in and released from Menindee Lakes to meet varying policy objectives.

There is also significant uncertainty regarding the Menindee Lakes reconfiguration, which means increasing uncertainty on how that project may impact proposals like this. It would be at best premature to set such a trigger with such uncertainty.

NSWIC is also concerned about an overly simplistic, blanket approach of a singular flow-target (i.e., at Menindee). This would be a backward step as it would not take into account:

- The unique conditions and requirements of each tributary valley.
- The hydrological connectivity of some creeks and rivers.
- The nature of valleys with inland ‘deltas’ like the Gwydir and Macquarie, whose Ramsar wetlands systems create relatively low levels of connectivity to the Barwon-



Darling in all but very wet years and have ecologically important functions that require watering.

- Localised flooding events where it may be hydrologically impossible for that water to make it out of a valley to contribute to a downstream target.
- The development of rules over time to reflect local conditions.

As recommended earlier, any such new 'end of system' target (irrespective of location), necessarily requires a valley-based mechanism to take account of more localised conditions, and lift restrictions if particular circumstances are met. For example, if flow forecasting indicates flows in localised upstream sections will not meaningfully contribute to downstream targets regardless of whether access is allowed or not, then restrictions should be lifted.

***Recommendation:***

NSWIC recommends that the practical challenges of using water volumes in Menindee Lakes as a trigger are included in the discussion paper.

## 7) Other

The *Interim Unregulated Flow Management Plan for the North West* (IUFMPNW) does not span to the Macquarie valley, and as such, it would be inappropriate for the Macquarie to be caught up in proposals relating to that Plan.



## Conclusion

We support river connectivity, defined as flows to meet critical human, environmental and cultural needs, within the physical, hydrological, and climatic limits on rainfall, inflows and flow rates.

We urge better communications to support a shared understanding of what connectivity means, to ensure public expectations pragmatically reflect the physical and hydrological limitations of unregulated river systems (which vary widely), particularly with a changing climate.

It is critical that the Discussion Paper can shape informed, constructive, and positive discussion on reducing risks to environmental and human water needs, within that context.

There must be greater emphasis on the reality that you cannot remove drought-induced risks to environmental and human water needs simply by restricting irrigators rights to water (which are largely restricted or suspended at these times anyway).

The key recommendation of this submission is the need for greater emphasis on the rules for lifting restrictions – not just their commencement. We recommend broader consultation with all impacted valleys on this matter.

Kind regards,

Jim Cush  
NSW Irrigators' Council, Chair

Ian Cole  
Barwon-Darling Water, Executive Officer

### [Appendix 1](#)

#### **Standard Practice of applying S324s**

We note that, historically, it is standard practice to apply S324s to meet critical needs.

Figure 1 (next page) shows “*Trends between Menindee Lakes 18-month reserve level and the application of extraction restrictions*” over the past two decades.

In this diagram, monthly storage levels in Menindee Lakes are shown by the blue line, and the orange line indicates levels required for 18 months reserve to supply for critical needs. This level is adopted as it was the previous operating arrangement when the town water supply for Broken Hill was supplied from the Menindee Lakes, before the pipeline was constructed to the Murray River. The yellow shading indicates where the volumes in Menindee storage dropped below the critical 18-month supply level. There are two key findings in this graph:

- (1) It has been standard practice over the previous two decades to apply restrictions on upstream access when supplies drop below this critical level.
- (2) There has been an increasing tendency to apply restrictions on access to the northern Basin since 2016 due to changes in inflows into the Lakes, despite the 18 months reserve no longer being required to also secure supply to Broken Hill following the town's connection to the Murray via the pipeline built in recent years.



Trends between Menindee Lakes 18-month reserve level and the application of extraction restrictions upstream

