



I N L A N D  
R I V E R S  
N E T W O R K

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Wednesday 13 July 2022

**SUBMISSION**  
Draft Western Regional Water Strategy

**Introduction**

The Inland Rivers Network (“IRN”) is a coalition of environment groups and individuals that has been advocating for healthy rivers, wetlands, and groundwater in the Murray-Darling Basin since 1991.

IRN welcomes the opportunity to engage in the process of developing a Regional Water Strategy for the Barwon-Darling/Baaka catchment and Far Western NSW (the RWS).

The management of NSW water resources is the most important responsibility of the NSW and Federal Governments. Water is a scarce resource in Australia, more than any other inhabited continent on earth. The increased pressure from extreme weather events caused by climate change is a key challenge for the Western Region water sources and communities.

The impact of the recent 2018 – 2020 intensive drought was catastrophic for the whole length of the Darling/Baaka River and indicates the need for much improved water management to prevent similar crises in the future. The Barwon-Darling/Baaka needs more water returned to maintain a healthy river and lakes environment.

The Darling/Baaka River has been classified as an endangered ecological community under the NSW *Fisheries Management Act 1994*. More attention must be paid to the Recovery Action Plan priorities in the RWS by making them Government commitments.

Management of water demand must be the key focus of the RWS, especially large extraction for flood irrigation. The Government’s main role is to prevent demand impacting on ecosystems or basic rights holders at times that are important for these priority water uses – during “normal” as well as dry years. It can also encourage reduction of demand without subsidising this. More efficient irrigation practices are critical across the NSW Northern Basin and Barwon-

Darling/Baaka cotton industry in a drying climate. Also important is improved management of evaporation from large on-farm storages.

In the Western NSW district, 10.5% of the population identify as First Nations People. The allocation of Cultural Water in the Barwon Darling/Baaka River must be prioritised in line with the United Nations Declaration on the Rights of Indigenous Peoples, and the 2020 Report on Closing the Gap.

IRN does not support the focus on increasing dependency on groundwater in the RWS. Until such time as more research is undertaken to improve information and knowledge of the complexity of groundwater systems and connectivity, it is imprudent to encourage more access to groundwater before implementing demand management practices and other sources of water, e.g. purified water recycling for improved town water supply.

The RWS notes that *‘We need better data and information on floods in the Western region, including how floodplains are connected, how groundwater reserves are replenished and the flood risk of towns and villages.’*<sup>1</sup> It is greatly concerning that the NSW Government is preparing to grant new floodplain harvesting licences in the Barwon-Darling/Baaka when so little is known about the value of various sized floods to ecosystem health and communities.

IRN gives in principle support to the six main challenges identified in the RWS however, we do not fully support some of the options proposed to meet these challenges. We are concerned by the number of options that have already been identified to be short-listed. This raises questions of the consultation process when many decisions appear to be already made.

There is no support for options that are likely to encourage new water dependent industries e.g. desalination of groundwater. We appreciate that the RWS does not emphasise the issue of growing the local economy through attracting more water intensive industries. We see this approach as a key failing in the draft RWS being developed for the main northern tributaries that supply flows to the Barwon-Darling/Baaka, Menindee Lakes, Lower Darling/Baaka, and connectivity to the Murray River.

The diversification of the regional economy could be improved through investment in floating solar farms to manage evaporation from on-farm storages and off-stream storages to replace instream town water supply weirs. Industries that benefit from flow in the river rather than taking much water out of it, such as tourism, could thrive if the health of the river system is significantly improved by achievement of environmental water requirements, increasing the lengths of flowing river habitats, reducing fish deaths and reducing inefficient demand for water from the river.

### **Key Issues:**

This submission will concentrate on the following issues:

1. Proposed instream infrastructure
2. Options to improve environmental health
3. Options to support First Nations cultural interests
4. Options to reduce water demand
5. Commitments

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<sup>1</sup> DPE-Water, June 22. Draft Western Regional Water Strategy. Consultation Paper p 54

## Background

### 1. Basin Plan Commitments

#### 1.1 Northern Basin Toolkit Measures

Under the Northern Basin Review, the Darling/Baaka lost access to 70 GL of held environmental water. NSW entered a commitment to implement toolkit measures to improve environmental outcomes including:

- Protection of environmental flows – to strengthen the efficient and effective delivery of environment flows, enhancing low flows and fresh flows
- Target environmental works and measures to promote fish movement and habitat, including the construction of fishways

It is imperative that the following actions are included in the RWS as commitments:

- protection of held environmental water crossing the Queensland border
- protection of held environmental water from NSW northern tributaries from all forms of extraction, including floodplain harvesting
- all projects to improve fish passage

#### 1.2 Menindee Lakes SDLAM Project

IRN strongly objects to the rebadging of the Menindee Lakes SDLAM project as ‘Better Baaka’. This is insulting to First Nations groups and could be taken straight from George Orwell’s *Nineteen Eighty-Four* novel by the Ministry of Truth. It is confusing how this project is described in the RWS and spread across various options, many that have already been identified as short-listed. The ‘Better Baaka’ program is part of the rescoping of the Menindee Lakes project, but it is unclear how the proposals fit together, under what time frame and what further consultation will be conducted.

#### 1.3 SDL

IRN notes that the recent MDBA audits of the Basin Plan found that the SDL was breached in the Barwon-Darling/Baaka every year since the audit process commenced in 2019. Improved management of extraction limits in the Barwon-Darling/Baaka should be a key focus of the NSW Government to reverse the level of ecological threat. The regulation of floodplain harvesting must not increase the volume of licenced extraction from the river system.

### 2. Endangered Ecological Community (EEC)

The Darling/Baaka River EEC includes all native fish and aquatic invertebrates within all natural creeks, rivers, streams and associated lagoons, billabongs, lakes, flow diversions to anabranches, the anabranches, and the floodplains of the Darling/Baaka River within NSW and including Menindee Lakes and the Barwon River.<sup>2</sup>

The EEC Recovery Plan includes a number of high priority actions that should be included as commitments in the RWS. These include:

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<sup>2</sup> <https://www.dpi.nsw.gov.au/fishing/threatened-species/what-current/endangered-ecological-communities/darling-river-eec>

- **Habitat Rehabilitation**
  - appropriate allocation and improved management of environmental flows, particularly in areas known to support remnant natural populations of threatened species and reduced diversion volumes during the spawning and larval period
  - Improve fish passage at major regulating structures
- **Research and monitoring**
  - Develop and implement a targeted investigation program to quantify the distribution and abundance of native species in the EEC, focusing on threatened species and populations. The investigation program should form the basis for monitoring over time
  - Develop and implement research projects investigating key areas of the biology and ecology of characteristic native species within the EEC to inform the recovery program. Projects are to include for example, investigation into flow requirements, taxonomic status, levels of genetic diversity, migration, habitat requirements, factors critical to the successful spawning and recruitment, interactions between trophic guilds, interactions with introduced species and environmental tolerances
  - Develop guidelines and principles to help determine the ecological needs of key characteristic species within the EEC and the flow levels required to complete their lifecycle
  - Develop and implement a research program to investigate the impacts of introduced species and diseases that affect native species occupying the EEC, and assess their potential impacts
  - Develop reference criteria for each river management zone to allow meaningful insights into ecological condition and changes over time to be made.
  - Review the available evidence on the impacts of fishing activities on characteristic native species within the EEC, and the current fishing regulations to determine the need for changes
  - Investigate available evidence on the impacts of commercial and recreational fishing activities on key native species in the EEC

## **Key Issues:**

### **1. Proposed instream infrastructure**

IRN does not support Option 11 to replace town water supply weirs, unless this involves replacing them with smaller weirs in combination with providing off-stream storages. When there are water quality problems, much more water is required to flush a large pool than a small pool. There is more evaporation from large pools. Weirs cause significant loss of habitat for native flow-specialist fish species, such as the endangered Murray Cod. Large weir pools have greatly increased the area of still water in the river. This impacts on the breeding cycle by inhibiting the downstream migration of floating fish eggs. The deeper still water is also less productive or unsuitable habitat for many small fish species that are important food for larger species.

Option 12 to determine potential for off-stream covered storage should be given a high priority to meet the priority challenge of declining water security for towns and small communities.

Option 10 to provide various pipelines across the landscape is not supported. The impacts on downstream flows and ecology will exacerbate the critical condition of the river system.

IRN strongly objects to option 48 to consider the regulation of the Barwon-Darling/Baaka. River regulation is a key threatening process under the NSW *Fisheries Management Act 1994* and is one of the greatest contributors to poor ecosystem health, impacting native fish, vegetation communities, productivity processes and ecosystem function.<sup>3</sup>

We note that this option includes installing gates on weirs and is being investigated under the 'Better Baaka' program to be short-listed. This is very poor consultation when a decision has already been made to prioritise an ecologically damaging project.

## **2. Options to improve environmental health**

IRN strongly supports the options proposed to improve the environmental health of river systems. Projects to improve habitat, provide better migration opportunities and remove some of the threats to native fish populations are highly necessary in the Darling/Baaka and should be commitments under the RWS.

It is critical that options to improve environmental health are given a high priority in the final RWS to mitigate current impacts and provide resilience for the endangered ecological community to withstand climate change.

IRN strongly supports the following commitments and options to improve environmental health:

- Commitment 3: Implement fish-friendly water extraction. The installation of pump screens on all large pumps in the Barwon-Darling/Baaka should be mandatory with industry funding the cost.
- Commitment 4: Modify or remove harmful floodplain structures. It is critical that this occur before water access licences are granted for works enabling Floodplain Harvesting.
- Option 23: Remediate fish passage
- Option 24: Restore riparian habitat and re-establish threatened fish species
- Option 25: Remove constraints to enable flows to reach important ecological sites
- Option 26: Improve protection of groundwater dependent ecosystems
- Option 27: Consider listing the Menindee Lakes under the Ramsar Convention on Wetlands of International Importance. The Lakes are important wetlands in the Basin
- Option 28: Develop and implement technology to create fish refuges. This option should only be considered for use during climate change induced extreme droughts. The cost of chemical and mechanical means of preventing hypoxic river conditions can be exorbitant whereas improved river management can provide healthier conditions. The protection of drought refugia from water extraction should be given top priority.

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<sup>3</sup> DPE-Water, June 22. Draft Western Regional Water Strategy. Attachment B: Long list of options p 118

- Option 29 and Option 43: Protect Commonwealth owned ‘held’ environmental water that flows from Queensland. This is a commitment of the NSW Government under the Basin Plan and must be a commitment under the RWS.
- Options 30 – 35: Improve water quality
- Option 44: Modify and remove non-town weirs. This could be extended to the removal of small-town weirs with replacement by covered off stream storages. Reinstatement of natural rock bars may be necessary to recreate natural pools as fish refuges and for recreational use.
- Option 46: Deliver replenishment flows from the Border Rivers, Gwydir, Namoi and Macquarie Rivers. Improved end-of-system flow targets are the best method of increasing flows to the Barwon-Darling. IRN does not support the use of held environmental water to replenish town water supplies. The provision of basic rights, stock & domestic and town water supply is a function of the Water Sharing Plans under the NSW *Water Management Act 2000*.
- Other connectivity options – Options 45, 47, 49 and 50

### **3. Options to support First Nations cultural interests**

It is concerning that consultation with First Nations people and acknowledgement of their water rights under the NSW *Water Management Act 2000* and Commonwealth *Water Act 2007* is taking so long in the Western region and NSW. We fully support the options included in the RWS that recognise cultural knowledge, water rights and interests. We note that the River Ranger Program has become a commitment and support that capacity building for participation in water policy is a key requirement. (Options 16-22 and 38)

### **4. Options to reduce water demand**

IRN recommends that high priority be given to options that reduce water demand. The climate change scenarios for the next 40 years predict lower inflows. This means less water in the system than currently available.

The RWS fails to recognise that current levels of water allocation cannot be supplied with any reliability. It is essential for the NSW Government to prioritise demand management over supply when climate predictions demonstrate that supply will diminish over time.

IRN strongly supports all options that reduce water consumption in towns and industry. More efficient use of water is critical to achieve sustainable communities into a future with less water. These include:

- Option 5: Better manage the Great Artesian Basin. Extending the Cap and Pipe Program is extremely important for protecting groundwater dependent ecosystems e.g. mound springs.
- Option 6: Assess the possibility of water recycling projects. Introducing purified water recycling to all inland towns should be a high priority of the NSW Government. We note that a pilot demonstration plant has been suggested for the Greater Sydney region. Small transportable purified recycling plants to improve education and awareness should be a priority project for Western NSW.
- Option 7: Investigate residential and non-residential water efficiency in towns. Demand management should have top priority, ahead of seeking additional supplies,

with all Councils and towns having an Integrated Water Cycle Management Plan, as required under the National Water Initiative

- Option 12: Determine potential for covered off-stream storages. This option should have a high priority and be considered as a replacement for town weirs. If public funds are used in trialling covers for private storages, an appropriate proportion of the water saved by reduced evaporation should be re-allocated to the river for public and environmental benefit
- Option 13: Investigate options to secure water for small communities
- Option 14: Study the resilience of water dependent industries. This should include the adoption of more efficient water use technology by the cotton industry to move away from wasteful flood irrigation practices and covering on-farm storages to mitigate high evaporation rates

Groundwater options: IRN does not support the various options involving increased dependency on groundwater. We note there are very few options for managed aquifer recharge in the Western region. Natural recharge of alluvial aquifers is far better than expensive managed recharge.

Supported groundwater options:

- Option 4: Review groundwater extraction limits. IRN supports the review of plan limits for groundwater sources with a very small recharge to storage ratio
- Option 39: Improve understanding of groundwater sources. It imperative to gain better knowledge of groundwater before encouraging increased use and dependency.

## 5. Commitments

IRN fully supports Commitments 1, 3 and 4. We have also identified other areas that should become commitments under the RWS.

**5.1 Commitment 2:** Fully implement the NSW Floodplain Harvesting reforms in the Barwon-Darling Valley

IRN has significant concerns with the NSW Floodplain Harvesting Policy and its implementation in the Barwon-Darling. This has been fully described in a submission lodged with the Healthy Floodplains Project on Friday 8 July.

It is imperative that Commitment 4: *Improving floodplain connections: modifying or removing floodwork structures causing adverse impacts* is carried out before Commitment 2 is finalised. Floodplain structures identified as unapproved or harmful to the environment in 'hotspots' (under the Floodplain Management Plan review) must be remediated or removed before floodplain harvesting works licences are granted. IRN particularly objects to lagoons and other natural wetlands on the floodplain being licenced for floodplain harvesting. This is a key threat to important drought refugia and to the Darling/Baaka EEC.

IRN objects strongly to the proposed 5-year accounting rule. This will allow for capture of important medium and low flood flows as well as the larger flows. All flood flows are critical for the health of the endangered Darling/Baaka. The lack of knowledge on return flows to the river after floodplain harvesting extraction is of key concern.

We also object to the rainfall runoff exemption particularly on properties where rainfall runoff is the major source of overland flow capture.

With the Barwon-Darling/Baaka already in breach of the Basin Plan SDL, floodplain harvesting licences must contain extraction under the existing plan limit.

The end-of-system targets for the NSW tributaries identified to protect flows into the Barwon-Darling from upstream floodplain harvesting are inadequate and were determined without community consultation. These need to be reviewed under Option 46.

## 5.2 **Commitment 5:** Review the North-West Unregulated Flow Plan Rules

IRN participated in the Connectivity Stakeholder Reference Group in good faith and lodged a detailed submission on the options presented to review the Interim North-West Flow Plan. We note that this plan was initially implemented by the Department of Water Resources but was never implemented by Water NSW – a failed Government commitment.

We also note that the preferred flow options in the Attachment D Discussion Paper give priority to avoiding impacts on extractive users in the NSW Northern tributaries rather than considering what is needed to restore an endangered ecological community. Examples of impacts on irrigation diversions in different valleys in particular years are detailed, but no equivalent details are provided about the benefits in those years in each reach of the Barwon Darling for a range of environmental assets in addition to the particular targeted benefits (percentage improvement in achieving environmental water requirements would indicate multiple benefits).

The extent to which continued implementation of the original rules, which are in the current WSPs, would both achieve environmental improvements and affect irrigation diversions appears not to be expressly presented although this should be the base case. Do the “current” model outputs assume the rules in the WSPs will not be implemented and do the “impacts” on irrigation compare the suggested new targets with continued non-implementation?

IRN strongly opposes the target of 195 GL in Menindee Lakes as a replacement for the riparian targets in the existing Interim North-West Flow Plan. The conditions in various reaches of the Barwon-Darling/Baaka River may differ from those at Menindee and those in some of the northern valleys so the flow rates in each reach of the river must be considered for the benefit of both basic rights holders and the environment. Targets for each reach are needed.

We support that the Environmental Water Requirements identified in the Barwon-Darling/Baaka Long Term Water Plan in accordance with the Basin Plan are the best targets to meet in the management of flows for the full suite of environmental needs. These include the needs of native plants, waterbirds and ecosystem function as well as small short-lived fish and larger migratory species. By focussing on changing the existing rules and ignoring this Long Term Water Plan, the opportunity to efficiently achieve a wider range of environmental benefits is being missed.

IRN requests that the extent to which each Environmental Water Requirement is or is not achieved by the “current” model scenario with historic and future climate be documented, and that alternative scenarios aimed at achieving many more or all of these Requirements be modelled.

Access to unregulated licences, supplementary flows and floodplain harvesting must be better managed to ensure ecosystem health in the Barwon and in the Darling/Baaka.

### 5.3 **Commitment 6:** Develop critical dry targets for the Barwon-Darling/Baaka River

IRN strongly objects to the critical dry target of 195 GL across the four Menindee Lakes. This fails to recognise the dead storage volume of 125 GL and will not protect the important environmental values of the Lakes or the Lower Darling/Baaka.

There should be no access to resumption of flows after drought in the NSW Northern Basin, including the Barwon-Darling/Baaka, until Menindee Lakes hold 450 GL and there have been 15 consecutive days of 30 GL flows at Wilcannia.

The published proposal also uses conditions in Northern Valleys as a basis for restricting or lifting restrictions on lower priority water users. IRN considers that restrictions should apply to all lower priority use classes, including floodplain harvesting, if Menindee Lakes hold less than 450 GL **or** stage 4 drought is declared **or** the tributaries have ceased to flow at any of the specified locations. Heavy rains sometimes only occur in part of the Northern Basin. Therefore, restrictions should not be lifted without adequate flushing flows right through the drought-affected valleys **and** prolonged high flows along all reaches of the Barwon-Darling/Baaka downstream such as the above target for Wilcannia, as well as Menindee Lakes holding over 450 GL.

## **Contact**

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