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Support for rule changes in Unregulated Water Sharing Plans

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 made individual submissions to the six draft replacement Unregulated River Water Sharing Plans (WSP) exhibited for comment in January 2025. A key issue emphasised was the critical need to protect low and very low flows in unregulated rivers, especially those identified with high environmental risk from water extraction. We therefore strongly support the proposed changes to protect these flows in some of the high risk rivers and creeks.

We noted that the first objective of the Unregulated WSPs is:

> *(a) to protect and, where possible, enhance and restore the condition of the water sources and their water-dependent ecosystems*.

Permitting pumping to continue until 'no visible flow' under WSP rules is a direct threat to the achievement of this important objective. It is also a failure to meet the environmental object of the *Water Management Act 2000*:

> *(b) to protect, enhance and restore water sources, their associated ecosystems, ecological processes and biological diversity and their water quality,*

It is critical that very low and low flows are protected in unregulated rivers and streams. These must be recognized as ecosystems not just as water sources.

The ecological significance of low flows

Low and very low flows in unregulated streams must be protected to provide important habitat requirements, not just for threatened or at-risk aquatic species but also for other water dependent species including riparian and terrestrial species that need a water supply between pools in dry times.

Low flows provide essential feeding habitats needed by a large variety of aquatic animal species such as riffles and submerged aquatic plants on the fringes of streams. Low flows are also essential dispersal opportunities for hatchlings (notably threatened Bell's Turtles) and for fish needing to move. They provide connectivity between pools and allow the food web to be maintained. Macroinvertebrates, such as dragonfly larvae and yabbies, are indicators of river health and provide food sources for fish, turtles and other species. Macroinvertebrates are particularly vulnerable to prolonged periods of no flow so the diversity of macroinvertebrates takes a long time to recover if low flows are not protected. This also delays recovery of aquatic vertebrates that need to eat macroinvertebrates. The movement of water through riffles also aids oxygenation and improves water quality.

The extraction of low and very low flows from unregulated streams lengthens periods of drought for the riverine environment and delays the return of ecosystem health. Extracting low flows from upper tributaries reduces the volumes and periods of flow into the lower reaches, so species and ecosystems way downstream are also impacted by cumulative effects. IRN included the following information on the significance of very low and low flows in submissions to the Unreg WSP remake process.

While all aquatic species can survive limited periods of no flow in creeks and other locations from which water is taken, all are at risk from extended periods of no flow and if the periods and volume or extent of flow are too small to enable feeding, survival through droughts, completion of life cycles and population recovery after droughts. Some need water of suitable quality continuously. Evaporation from pools has the essential function in sunny weather of limiting water temperature but keeps shrinking the area of every fish refuge pool and may prevent survival. Flows not only enable individuals to move between refuges but trigger and, if of sufficient volume and duration, aerate the deeper pools and enable growth of food – processes that are as essential as water. Macroinvertebrates and other species with life cycles that may enable survival in damp or even dry streambeds cannot survive indefinitely without flow. The diverse macroinvertebrates which normally live and feed in flowing habitats, such as riffles, have central positions in the food webs of many of the fish species in unregulated streams. Flows of sufficient volume can greatly increase the area of productive habitat between pools. It is therefore not surprising that many inland fish species are recognized as flow-dependent, including Eel-tailed Catfish and Purple-Spotted Gudgeon: threatened species struggling to survive.

Reliance on 'top of the range' gauging systems

IRN strongly supports the proposed improvements in cease to pump rules across key high conservation values streams in inland NSW. We see this as an important first step. However, we are deeply concerned that many high conservation value, high risk streams and all other unprotected unregulated ecosystems have not been included in this important opportunity.

The focus on the only using expensive telemetry gauging systems to specify commence to pump levels is preventing improved ecological outcomes through stronger rules in Unreg WSPs in all the streams that lack telemetered gauges.

We are very concerned that the Hydrological Risk Assessment developed by DCCEEW science staff prioritising areas for additional gauges has not been released. There is a need for greater transparency in all matters relating to measurement of water extraction.

While adding telemetered gauges on more streams would be useful, there will never be enough for the purposes of low flow protection. Our submissions to the WSP remake process suggested a number of simpler, cheaper water measurement processes that could be implemented immediately:

Alternative or interim measures are needed now. For example, where there is no telemetered gauge, rules could be developed that refer to recognizable low flow levels at publicly accessible locations, to apply in addition to requiring visible flow at or into the pump site. There are discontinued gauge locations that may be suitable[1], or there may be locations where flow across a minimum width instead of depth can be seen. Compliance could be demonstrated with time-stamped photographs matching a record[2] of pump use. Another interim measure could involve applying higher CtP rules to all pumps above a minimum size because big pumps can have the worst impact on very low flows.

Support for proposed rule improvements in 11 sub-catchments

IRN supports the rule changes proposed for tributaries in the Gwydir, Namoi Peel, Macquarie/Wambuul Bogan and Lachlan catchments.

Gwydir Unregulated Water Sharing Plan 2025:
Moredun Creek: cease-to-pump at ≤80 ML/day (Bundarra gauge).
Tycannah Creek: cease-to-pump at ≤2 ML/day (Horseshoe Lagoon gauge).
Copeton Dam Zone: cease-to-pump at ≤80 ML/day (Bundarra gauge).

Namoi & Peel Unregulated Water Sharing Plan 2025:
Cockburn River Zone: cease-to-pump at ≤36 ML/day (Kootingal Bridge Weir).
Maules & Horsearm Creeks: cease-to-pump at ≤75 ML/day (Maules Creek at Avoca East).
Macdonald River (upstream Woolbrook): cease-to-pump at ≤60 ML/day (Woolbrook gauge).
Macdonald & Namoi Rivers Zone: cease-to-pump at ≤16 ML/day (North Cuerindi gauge).

Macquarie/Wambuul Bogan Unregulated Water Sharing Plan 2025:
Cudgegong River Downstream Zone: cease-to-pump at ≤3 ML/day (Rylstone gauge).
Lower Bogan River: cease-to-pump at ≤48 ML/day (Gongolgon gauge).

Lachlan Water Unregulated Sharing Plan 2025:
Lower Mandagery Creek Zone: cease-to-pump at 10 ML/day (Eugowra gauge) with 2-day "first flush" before pumping resumes.
Boorowa River & Hovells Creek: cease-to-pump at ≤6 ML/day (Prossers Crossing gauge).

[1] https://datasets.seed.nsw.gov.au/dataset/river-basin-maps-and-water-monitoring-gauging-station-details-pinneena-maps
[2] If small pumps not yet required to have telemetered meters were required to have a basic meter, date-stamped photos of meter readings would be appropriate.

While all these water sources contain streams of different sizes, it is notable that the Copeton Dam Water source includes many creeks draining into the dam as well as a reach of the Gwydir River which gets its flow from other water sources. The ceases-to-pump level proposed is entirely appropriate for the Gwydir and it is important that the WSP raise the cease-to-pump level for the creeks as well. Bells Turtle occurs in these creeks along with many other valuable species so extraction rules should not put them at risk. The proposed rule would allow extraction from the creeks down to no-visible-flow whenever the Gwydir at Bundarra is over 80 ML/day, but will not allow any pumping from the creeks on occasions when a storm over their little catchments produces a brief high flow at a time when the river at Bundarra remains below 80 ML/day (even if there are also storms in the Gwydir catchment closer to Uralla, their runoff may not reach Bundarra until after freshes in Copeton source creeks have passed the pumps and reached the dam). If any change to the proposed rule is to be made it should ensure protection of all flows in the "very low" range (below 95th percentile of times of flow in the creeks) and should preferably provide protection up to the 87th percentile which research has found Bells Turtle hatchlings need.

A similar situation may arise in Moredun Creek: the 80 ML/day rule must apply to pumps in the Gwydir and the bottom end of Moredun Creek and if any change is being considered for licences further up this creek they must protect all very low flows and some above this level.

The Lower Bogan water source appears to include the Little Bogan which may be an anabranch of the Barwon-Darling/Baaka. If so, the connectivity of this waterway should be protected and conditions for licences there on the needs of ecosystems both in the Little Bogan and in the Barwon-Darling/Baaka, rather than being based on a Lower Bogan gauge.

Ecological improvements through rule changes:

IRN supports that the increased protection of low flows in these high conservation value stream ecosystems will provide habitat improvements for a range of threatened species. They also improve support for riparian vegetation, water birds and terrestrial species, including threatened species such as Koala that rely on riparian vegetation in dry landscapes. All native animals need access to water and the improved rules will increase resilience to drought and the impacts of climate change.

We support the rules to protect habitat for threatened species in the 11 nominated sub-catchments:

Gwydir Unregulated Water Sharing Plan 2025:

- Moredun Creek: supports Murray Cod, the endangered Eel-Tailed Catfish and Bell's Turtle
- Tycannah Creek: As a tributary of the Mehi River, is highly important for fish refugia, breeding and movement across the Gwydir Valley. It has high instream values supporting endangered, Purple-Spotted Gudgeon and Eel-Tailed Catfish. It also contains ecologically important water-dependent ecosystems including the Lowland Darling River Endangered Ecological Community.
- Copeton Dam Zone: supports Murray Cod, the endangered Eel-Tailed Catfish and Bell's Turtle

Namoi & Peel Unregulated Water Sharing Plan 2025:

- Cockburn River Zone: supports Murray Cod, Golden Perch, the endangered Booroolong Frog, Tusked Frog, Purple-Spotted Gudgeon, Eel-Tailed Catfish, Olive perchlet.
- Maules & Horsearm Creeks: supports the Tusked Frog, Davies' Tree Frog, Purple-Spotted Gudgeon, Eel-Tailed Catfish, and Olive Perchlet and is predicted to support the Booroolong Frog.
- Macdonald River (upstream Woolbrook): supports Murray Cod, including the Booroolong Frog, Tusked Frog, Bell's Turtle, and Eel-Tailed Catfish, and the vulnerable Davies' Tree Frog.
- Macdonald & Namoi Rivers Zone: supports Murray Cod, the Tusked Frog, Eel-Tailed Catfish, and the vulnerable Davies' Tree Frog, and is predicted to support the Booroolong Frog.

Macquarie/Wambuul Bogan Unregulated Water Sharing Plan 2025

- Cudgegong River Downstream Zone: supports Murray Cod, the Booroolong Frog, Golden Bell Frog, Purple-Spotted Gudgeon and Eel-Tailed Catfish.
- Lower Bogan River: supports Murray Cod, Silver Perch, Olive Perchlet, Eel-Tailed Catfish, and the Lowland Darling River aquatic endangered ecological community

Lachlan Water Unregulated Sharing Plan 2025

- Lower Mandagery Creek Zone: supports Murray Cod, Silver Perch, the Booroolong Frog, Sloanes Froglet, Yellow-Spotted Tree Frog, Purple-Spotted Gudgeon, Eel-Tailed Catfish, and the Lower Lachlan River endangered ecological community
- Boorowa River & Hovells Creek: supports Murray the Booroolong Frog, Sloanes Froglet, Southern Pygmy Perch, and the Lower Lachlan River endangered ecological community

Improved downstream outcomes

The proposed rule changes provide additional benefits for downstream water users:

- improved cultural and social outcomes
- increased access for basic rights users
- improved connectivity to the Darling/Baaka from Bogan River, Maules and Horseman Creeks, Tycannah Creek
- additional inflows to Copeton Dam and Burrendong Dam

Conclusion

IRN strongly supports the proposed improved protection of very low and low flows in the 11 nominated sub-catchments of four inland rivers systems.

We strongly recommend that the Hydrological Risk Assessment report identifying priorities for new gauge investment must be publicly released.

We see the proposed increases in cease-to-pump rules as a first step that must be replicated across all inland unregulated streams with alternative water measurement options available to assist compliance.

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