

Thank you for the opportunity to speak today on behalf of the Inland Rivers Network at this IPC public meeting about the Ulan coal mine MOD 4.

My name is Melissa Gray, I live in the [REDACTED]

The proposed extension to the Ulan coal mine MOD 4 is of extreme concern to Inland Rivers Network - as advocates for healthy rivers in the Murray Darling Basin, we consider that potential risks of this mine extension to base flows of the Talbragar River is too high.

Rivers and fresh water sources around the world are increasingly and alarmingly under threat from over extraction, declining water quality and climate change.

The most exhaustive global analysis of rainfall and rivers was conducted by a team led by Professor Ashish Sharma at Australia's University of New South Wales in Sydney. The study relied on actual data from 43,000 rainfall stations and 5,300 non-urban river monitoring sites in 160 countries.<sup>1</sup>

The study has discovered the worrying paradox that most regions in the world show decreased streamflow with higher temperatures and increased heavy rainfall events. Global fresh water supplies are shrinking at the same time as climate change is generating more intense rain.

The culprit is the drying of our soils – evaporation is very high, and our soils are getting extremely parched.

Across the world, the study has shown small to medium floods (the kind of floods that fill dams) have reduced by 10 – 15% for each degree rise in temperature. We have already had a 0.9 degree rise, with a 3.5 degree rise predicted by 2100.

Researchers are pointing to a world where drought-like conditions will become the new normal – especially in regions that are already dry, like ours.

The Macquarie Valley is one of the worst affected regions in this severe time of drought in NSW, with storage currently at critically low levels. Inflows into Burrendong dam have been extremely low, since January 2018 they have been the lowest recorded inflows in history. Inflows into Burrendong dam are 60% below previous record low inflow.

Burrendong  
5.28%  
today

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<sup>1</sup> <https://www.dropbox.com/sh/p2z9w0jtdofq3q7/AAAU3Bk-NWjRO8cR1OXYcza?dl=0>

# Comparison of drought inflows – Burrendong Dam



## Drought inflows for 37 months starting in December

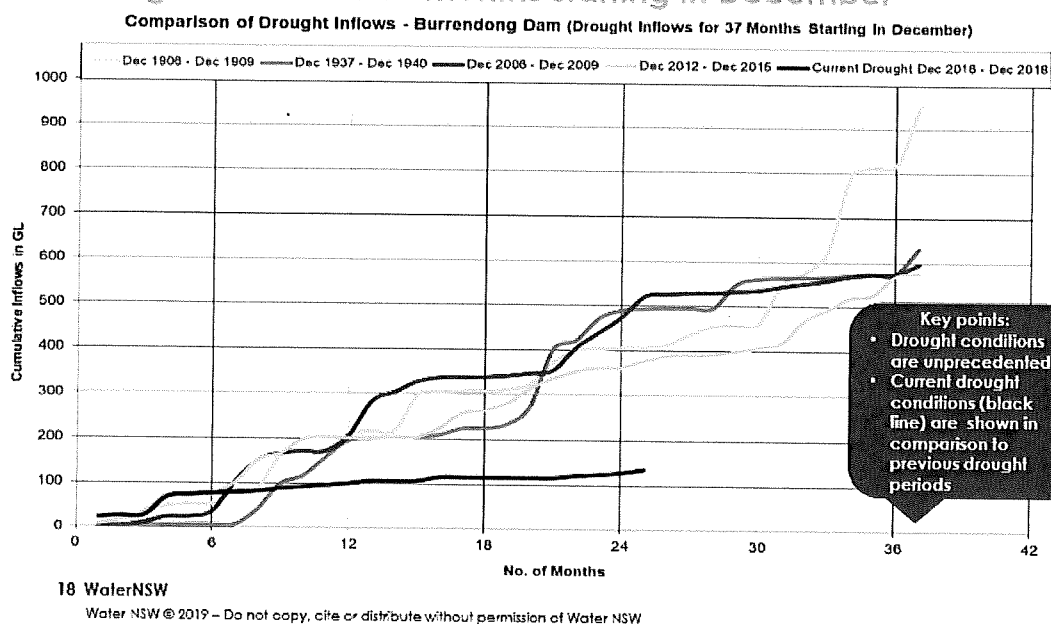


fig 1 Comparisons of drought inflows – Burrendong Dam. Source: WaterNSW Macquarie-Cudgegong Valley Operations Update January 2019.

The Macquarie River is currently Stage 4 critical water storage (the highest level). For the first time since regulation, the Macquarie River will be ‘turned off’ (ceasing to flow) at Warren weir from the first of next month.

If current record low inflows continue, WaterNSW will be in the unprecedented position of installing new infrastructure and pumping water from ‘dead water storage’ by February 2020, and the dam will be empty by May/June 2020.

Inland rivers are extremely reliant on low flows in dry times, when any water is very significant. The lack of protection of low flows in the Barwon/Darling system, for example, was found to be a significant contributing factor to the catastrophic fish kills in the Lower Darling earlier this year.<sup>2 3</sup>

Inflows into the Macquarie River from the Talbragar River are extremely important, providing water for critical human need, river health, wildlife survival, high security water needs and stock and domestic supplies in the mid to low sections of the Macquarie Valley, which include the internationally significant Ramsar listed Macquarie Marshes.

Inland Rivers Network objects to the application for the fourth modification of Ulan continued Operations approved in 2010 (Mod 4) because of the cumulative impacts on the Talbragar River and the NSW Murray Darling Porous rock Groundwater Source. If approved, Mod 4 would increase base

<sup>2</sup> <https://www.science.org.au/supporting-science/science-policy-and-sector-analysis/reports-and-publications/fish-kills-report>

<sup>3</sup> <https://www.mdba.gov.au/publications/mdba-reports/independent-panel-assess-fish-deaths-lower-darling>

flow losses and extend the period of time of groundwater and surface flow recovery. Extensive assessment of this impact is required, and found lacking within this proposal.

The Triassic sandstone aquifers in the Talbragar catchment will be drawn down by up to an additional 50 meters due to MOD 4 by the end of underground mining. The impact of this draw down on the surrounding landscape and water sources has not been adequately assessed. The Response to Submissions fails to address concerns about the drawdown raised by Inland Rivers Network.

The Ulan Mod 4 proposal predicts that due to the additional area of depressurisation, an incremental base flow reduction of 0.003 ML/day can be expected for the Talbragar River. This is a predicted increase from 0.217 ML/day to 0.220 ML/day (or 80 ML/year), and no information is available on the length of time that these base flow losses will occur after mining. This is a significant reduction of base flows for the Talbragar in years of drought – and we can expect more years of drought as the climate continues to warm and to dry.

Mona Creek is an ephemeral tributary of the Talbragar River, which would be undermined by the Mod 4 proposal. There is no consideration of subsidence from mining under the creek impacting on the alluvium and stored base flows after rainfall. Subsidence is predicted to increase ponding and change flow velocities in the creek.

There is a predicted peak water take in 2022 from the NSW Murray Darling Porous Rock Groundwater Source of 6,629 ML / year. ~~Not only is this a very significant volume of water to take from this system, but Ulan Coal has not to date secured enough water access licences to cover this amount, there is a 1,975 ML/year shortfall. We recommend Mod 4 not be considered for approval until such time that Ulan Coal show they have all licenced requirements for the predicted groundwater take.~~

The groundwater model does not include all sources of base flows. Therefore the loss of alluvium and springs though subsidence impact is not included in the predictions.

There is no consideration given in this proposal to how groundwater sources are expected to recharge and recover after the life of this project.

In conclusion, Inland Rivers Network considers that the impacts of Ulan Mine operations on river and groundwater systems of the Murray-Darling Basin are already excessive and unsustainable. The proposed expansion of Ulan mine underground operations poses an unacceptable risk to the hydrology and ecology of the Talbragar River. We recommend this coal mine expansion be rejected.

19/6/19