

5. Other options

The CEWO supports the following options as a high priority for further investigation

- End of system flow rules for all tributaries
- Extension of Resumption of Flow Rules from Barwon-Darling to tributaries, in conjunction with restriction of supplementary licences to meet riparian targets and restriction of A,B, C and supplementary licences to meet algal suppression and fish flow targets regardless of triggering of the RoF rule by extended dry periods
- Dam reserves – re-evaluating dam reserves for meeting critical human and environmental needs, end of system flows, and sufficient conveyance for delivery of entitlement water during extended dry periods

The CEWO supports the following options to be undertaken as a matter of course:

- Removing unapproved floodworks structures
- Formalising management arrangements for the Great Darling Anabranh

Table: Summary of CEWO comments on the major options presented

Option	Comments
Riparian Targets: NWFP	While supportive of the rule in principle, we do not support the size of the NWFP flow targets in the absence of contemporary evidence to suggest they are appropriate, particularly the lower targets that only protect water in the very low flow range of the LTWP.
Riparian Targets: removal	We do not support this option, as although A class thresholds protect an approximately appropriate amount of water from extraction by Barwon-Darling users, it does not restrict access in the tributaries where the bulk of flows originate.
Riparian Targets: extending the Resumption of Flows Rule	The resumption of flows rule is designed to protect first flows after extended dry periods. We support extending the RoF rule to restriction of supplementary access in upstream tributaries. The RoF rule cannot contribute to meeting riparian, algal suppression or fish flow targets except in fairly specific circumstances following an extended dry period. Therefore, we support another mechanism (see below) to apply restrictions to supplementary licences meet these targets when the RoF rule is not triggered, so that the targets are prioritised at all times.
Riparian Targets: LTWP (new)	We recommend that riparian targets be aligned with the in-stream non woody vegetation objective in the LTWP, which represents the best available contemporary evidence. The objective aligns with the baseflow range in each management unit. Targets should be set following the advice of the relevant EES expertise. Barwon-Darling and tributaries should be restricted to meet these targets.
Algal suppression target: NWFP	We do not support these targets based on the availability of better more contemporary information.
Algal suppression target: contemporary	We support these targets based on best contemporary evidence. We look forward to publication of any additional work undertaken by DPIE science team to support this. We also look

	forward to the provision of material that demonstrates alignment with the LTWP.
Fish targets: NWFP	We do not support this option as there is now better information available supporting the intention of this target, however it is preferred over the suspension of all fish targets because of infrastructure improvements (the below option).
Fish targets: infrastructure solutions (fishways etc)	We support infrastructure that improves the free movement of fish through the Barwon-Darling and tributaries. However in the absence of appropriately sized flows, fishways do not by themselves maintain healthy fish populations. Although the NWFP states that the fish passage flow could be suspended once all fishways were functional, it also states that research to improve fish health should be undertaken. The original fish passage target was focused on flooding weirs to promote temporary free movement. We now know that this flow is also of sufficient velocity and timing to promote recruitment, productivity and dispersal, which still require Large Fresh flows according to the LTWP. So although we support the implementation of this option, it should not justify abandoning a large fresh range fish target.
Fish targets: contemporary	We support this option on the basis that it is designed on best contemporary information and takes into consideration the full pattern of flow requirements for fish population health. It is consistent with the intentions of the NWFP, CEWO, and Basin-wide watering strategy priorities. The option presented does not specify a duration but assume it to be aligned to golden perch requirements. This mechanism should be combined with other fish health mechanisms to ensure optimum outcomes – such as fishway infrastructure solutions (option above) and mandatory fish screens on offtakes.
Menindee Lakes Critical Human and Environmental Needs Storage Targets	<p>The CEWO supports a Menindee Lakes storage target to prioritise critical needs during a severe water shortage throughout the northern Murray-Darling Basin. This should be applied consistent with the priorities of water access under the <i>Water Management Act 2000</i>.</p> <p>A single volume target (195 GL) could result in oscillation between restriction and access upstream. Consideration should be given to a higher target coming out of the restriction. If it were designed to be consistent with the 480/640 rule (33% more), then the easing target as the storage rises would be 260 GL coming out of drought.</p> <p>The storages to which the target applies should be clarified. If the storage target is just Lake Wetherell, the 195 GL target could be problematic because Lake Wetherell operating procedures require the operator to periodically draw down water levels to prevent drowning of floodplain vegetation. This could result in perverse outcomes whereby operating rules regularly trigger upstream restrictions.</p>

Final remarks

The CEWO acknowledges the potential significant connections between the regional water strategies and the Basin Plan, particularly regarding the protection of planned environmental water. The Basin-wide environmental watering strategy prepared under the Basin Plan builds on the environmental objectives in the Plan. It sets out the priorities for river flows and connectivity, native vegetation, waterbirds and native fish with the water being recovered for the Basin environment and other measures to improve flows in the river system. For transparency and clarity, the community may appreciate a clear explanation of the relationship between the NSW regional water strategies, the Commonwealth Basin Plan, and Basin-wide environmental watering strategy which all set a forward agenda for how water is to be managed at a broad scale for multiple outcomes.

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ⁱ NSW *Water Management Act 2000* - <https://legislation.nsw.gov.au/view/html/inforce/current/act-2000-092>

ⁱⁱ Mitrovic, S and Gordon, A 1998, Barwon-Darling Riverwatch, Algae and Water Quality Report 1992– 1997, NSW Department of Land and Water Conservation, Sydney.

ⁱⁱⁱ Simon M. Mitrovic, Lorraine Hardwick, Forugh Dorani, Use of flow management to mitigate cyanobacterial blooms in the Lower Darling River, Australia, *Journal of Plankton Research*, Volume 33, Issue 2, February 2011, Pages 229–241, <https://doi.org/10.1093/plankt/fbq094>

^{iv} Mitrovic, S.M., Chessman, B.C., Bowling, L.C. and Cooke, R.H. (2006), Modelling suppression of cyanobacterial blooms by flow management in a lowland river, *River Research and Applications*, 22 109-114.