Maximising the benefits of environmental water by allowing river flows to re-connect floodplains and wetlands

The issue

The benefits of environmental water recovery are limited by constraints that prevent water from flowing from the river channel adjacent wetlands. The Commonwealth government has spent billions of dollars acquiring water that is not being used to its full potential to maintain the ecological condition of wetlands and conserve their biota. Current river operations prioritise keeping flows within river channels due to infrastructure limitations, operational rules and the risk of flooding private land, rather than delivering ecologically beneficial floods. Between 2014 and 2019, only 21% of Commonwealth environmental flow releases were delivered overbank to water wetlands.[1] Addressing these constraints is essential to achieving the environmental outcomes intended under the Murray–Darling Basin Plan.

What needs to be done

'Constraints relaxation' refers to the removal of these physical and policy constraints. Governments have agreed to prioritise constraints relaxation by working with landholders and other stakeholders along some of the main river reaches in the Murray–Darling Basin.[2] Progress is underway in some areas, but in others there is a need to move from planning to implementation. The challenge is to achieve agreement between federal and state governments for sustained funding over a realistic period needed for implementation.

The Commonwealth should play a stronger role to support constraints relaxation by:

- Extending the timeline for constraints relaxation projects to 2036 and remove constraints relaxation from Sustainable Diversion Limit Adjustment Mechanism (SDLAM).

  Why? Constraints relaxation is currently bundled within the Sustainable Diversion Limit Adjustment Mechanism program, which is required to be delivered by the end of 2026. Constraints relaxation requires long-term community engagement, including with around 3,000 landholders, and will take more time to implement.[3]

- Providing long-term funding to states for landholder agreements, flood easements, infrastructure upgrades and other measures needed to support overbank flows.

  Why? Funding is needed for infrastructure upgrades and landholder payments. Landholders who agree to allow planned overbank flows on their properties may receive a payment to adapt their land use to different uses, e.g. to grazing rather than cropping. Adaptation may include the need for construction of bridges to maintain road access when there is water on the floodplain.

- Framing constraints relaxation as a regional investment that delivers better flood preparedness for landholders, reduced water quality risks and more resilient wetlands and communities.

  Why? Constraints relaxation has largely been framed as an environmental reform, overlooking its benefits to individual landholders and its significance as a regional investment. Delivery involves payments to landholders for flood easements, upgrades to bridges and roads, levee realignments,

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and ongoing on-ground works, representing substantial investment in regional communities. Constraints relaxation will help reduce peak impacts of some medium-to-large flow events by enabling earlier, controlled pre-flood releases from dams. These potential flood mitigation benefits have not been adequately modelled or communicated despite their importance.

- Taking a more active role in coordinating Commonwealth, state and Basin agencies to improve planning, prioritisation and delivery of constraints relaxation projects.
- Securing ministerial agreement between the Commonwealth and Victoria on a realistic constraints relaxation implementation timeline and clear liability arrangements for flood-related damage.

  Why? Responsibility for constraints relaxation is fragmented. Funding sits with the Commonwealth, policy oversight with the Murray–Darling Basin Authority, and implementation with the states. As a result, implementation in Victoria has stalled.

  In Victoria, river operators could be liable for unintended impacts from water they release from dams. Consequently, river operators take a risk-adverse approach to avoid flooding private property. No single agency has a mandate to resolve all the planning, liability and timeline issues. The Commonwealth and Victoria must agree on a liability approach; either through a no-fault framework following due process or by an agreed cost-sharing model.

  - Supporting states to ensure that constraints relaxation is subject to proportionate planning pathways.

  Why? A significant delivery risk in Victoria is the application of major project planning pathways to constraints relaxation. Treating flow management as a single large-scale development would trigger extensive planning approvals across hundreds of kilometres of river frontage, rendering the process unworkable.

  While individual works such as bridge upgrades, levee modifications or road realignments should continue to be assessed through established planning processes, the managed release of water itself requires a clearer and more proportionate regulatory pathway. Without this distinction, planning approval requirements may continue to present a structural barrier to progress.

- Ensuring local communities and landholders are actively involved in decision-making and implementation.[4]

Benefits

Constraints relaxation can:

- Improve the health of wetlands and rivers because they are receiving the water they need to remain healthy;
- Increase growth of pastures, enhancing the productivity of floodplain grazing;
- Replenish groundwater reserves;
- Improve floodplain lateral connectivity enabling floodwaters to be retained in natural flood storage areas adjacent to the main channel which can potentially decrease damage caused by medium to large floods;
- Support regional employment through infrastructure upgrades, land management and ongoing environmental water delivery;
- Improve the condition of floodplain forests, including river red gum ecosystems which could increase carbon sequestration and timber production;[5]

- Provide a cost-effective method to deliver environmental outcomes by restoring natural flooding processes, since it is ten times cheaper than environmental engineering methods to provide water to wetlands[6]

What does success look like?

- Improved water quality and decreased likelihood of blackwater events and blue-green algal blooms;
- Communities experience improvements in recreational fishing, boating, birdwatching and tourism;
- Strong partnerships between governments, landholders and local communities that support long-term environmental water management.[7]

Cost of implementation

Based on findings by Ziang et al. (2025), the constraints management strategy proved to be nearly ten times cheaper to implement, with a lower water cost per hectare compared with the construction of environmental infrastructure, involving levee banks, weirs and regulators to water wetlands.

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