



Australian
Farm Institute

Managing Environmental Water for System-Wide Benefits

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Introduction

In June 2010 the Australian Farm Institute sponsored a symposium on Making decisions about environmental water allocations. One of the questions the symposium addressed was how best to allocate environmental water amongst competing environmental needs.

The presentations and accompanying research papers raised some important issues, and discussed many of the challenges involved in ensuring environmental water is managed efficiently and effectively.

Managing water entitlements (ie held environmental water), rather than environmental flows provided for in water sharing plans (ie planned environmental water), is a new and evolving field and the Institute is to be commended for encouraging dialogue on this important topic. The issues raised go to the core business of the Commonwealth Environmental Water Holder and this article outlines our current approach.

As recognised by the presenters, Australia's river systems, particularly in the Murray-Darling Basin, are under considerable stress. The condition of the Basin's rivers has been well documented, such as through the Sustainable Rivers Audit, which found that twenty of the twenty-three river valleys are in poor or very poor health.

To help address this situation the Commonwealth *Water Act 2007* established the Murray-Darling Basin Authority (MDBA), as an independent organisation responsible for planning the integrated management of water resources across

the Basin. Its role includes the development of a Basin plan that will include a new basin-wide limit on water extractions. For the first time there will be a maximum limit on diversions across all jurisdictions, covering both surface and groundwater, and set at a sustainable level.

In part to facilitate the move towards a new basin-wide cap, the Commonwealth is acquiring a share of the Basin's water resources. Water entitlements are being acquired for the Government's holdings through direct purchase and as a share of water savings achieved through infrastructure investments. The *Water Act 2007* prescribes that the holdings must be managed for the purpose of protecting or restoring environment assets. The legislation also establishes the statutory position of the Commonwealth Environmental Water Holder, within the Department of Sustainability, Environment, Water, Population and Communities, to manage the water holdings.

Whole of Basin Environmental Outcomes

The Commonwealth environmental water holdings have been purchased with the objective of achieving the best possible environmental outcomes for the Basin as a whole. Use of the holdings must be in accordance with the MDBA's environmental watering plan that is part of the Basin plan. By its very nature this establishes a framework for a whole-of-Basin approach.

As volumes of held environmental water increase, the range of environmental watering actions which can be undertaken will also expand. For example, decisions will increasingly

be made on the basis of connected benefits between sites rather than the more limited benefit to individual wetlands. Included in this will be directing water through particular river reaches and where possible across floodplains. Commonwealth environmental water has already achieved environmental benefit on public land (including national parks and state forests), and private land (including Ramsar listed wetlands).

Held environmental water is not equivalent to planned environmental water. Held water is intended to complement and supplement existing environmental flows but it has the same water security as equivalent titles – that is, those water entitlements that are typically used for irrigation. Held environmental water can also be actively managed (as is irrigation water) to achieve the most effective environmental outcomes for the system as a whole. Whilst there are delivery constraints that vary depending on the local conditions, the objective is to achieve overall system benefits without regard to jurisdictional or local boundaries.

Within operational constraints there is an ability to move held environmental water to where it will provide the best result. This provides flexibility that recognises the integrated nature of the Basin's ecosystems and different hydrological and climatic conditions that may apply across the Basin at any particular time. The ability to move water allows us to achieve the maximum environmental outcome from the available water, or a given outcome with less water acquired.

Adapted to Local Conditions – Local Engagement

Whilst the arrangements are focused on basin-wide outcomes the approach we are taking to managing Commonwealth environmental water is also adapted to meet local and regional arrangements.

For example, watering options in catchments such as the Murrumbidgee, Lachlan and Macquarie in NSW, are informed by local environmental water advisory groups established by the NSW Government. These groups include local land managers and other community members, independent scientists, and government

officials amongst others, and provide an important forum for drawing on local knowledge and experience in managing environmental water.

Use of the Commonwealth's environmental water is also calibrated to take into account differences in the nature and condition of environmental assets across the Basin. Where conditions are extremely dry, watering actions target drought refuges. Where conditions are wetter, the focus is on extending the duration and extent of high flows.

The Commonwealth is working closely with state governments and other environmental water holders, catchment management authorities, local site managers and community organisations – both in the identification of watering options and in the delivery of water and monitoring of outcomes. This involves ongoing dialogue with environmental water managers, participation in local environmental water advisory groups, employing long-term agreements with delivery partners and establishing short-term arrangements to deliver water to specific environmental assets.

The delivery arrangements for approximately nine gegalitres of environmental water to Hattah Lakes 2009–10 are typical of the Commonwealth's arrangements for coordinated environmental water use in Victoria. The identification of the watering action was undertaken in conjunction with the Mallee Catchment Management Authority (CMA), the Victorian Department of Sustainability and Environment and The Living Murray program. The Mallee CMA delivered the Commonwealth's water which was coordinated with three gegalitres from the Victorian Government, five gegalitres from The Living Murray, and 400 megalitres through the Australian Conservation Foundation. The CMA and Parks Victoria managed the monitoring of the water use with the support of local community groups.

The MDBA's environmental watering plan will further develop arrangements but coordinated environmental watering is already a reality. In the first two years of operation, 165 gegalitres of Commonwealth water was delivered to sites in conjunction with 172 gegalitres of water from other environmental water sources.

Managers of held environmental water are also increasingly being represented on the local customer consultative committees of state water agencies. Leading on this front is NSW State Water which has identified environmental water holders as important customers. In this respect managers of held environmental water have a significant interest in common with other water users. Effective and efficient water planning and management, including the management of infrastructure, is in the interest of both environmental and agricultural users.

Scientifically Robust

To determine environmental priorities the difficult decisions which have to be made need to be based on the best available scientific information. A science-based approach to the prioritisation of Commonwealth environmental water is being taken and an Environmental Water Scientific Advisory Committee has been established to advise on methods for determining relative priorities, areas which merit additional investigation/research, and on the best approach to assessing the benefits of environmental watering.

With input from the Committee, a *Framework for determining Commonwealth environmental watering actions* was finalised and published in late 2009, incorporating feedback from stakeholders provided through public consultation.

In accordance with the framework, objectives for the use of Commonwealth environmental water vary subject to seasonal conditions. Proposals for watering events are evaluated against a set of published criteria. The criteria include consideration of the ecological significance of the environmental assets; the expected ecological outcomes from the watering; the long-term sustainability of the assets including management arrangements, and issues of risk and cost effectiveness.

Transparent

The approach to environmental watering is also described in the Commonwealth Environmental Water Holder Business Plan, available on the Department's website. The Business Plan is updated from time to time to reflect the evolving nature of environmental water use.

The Department's website is also kept up-to-date with details on the volumes and locations of the water holdings, and where and how much water has been made available for use. Also available on the website is an inaugural report on the preliminary outcomes from the first use of Commonwealth environmental water. Monitoring of outcomes including for example vegetation health, bird, fish and frog responses is currently undertaken primarily through existing programs that state jurisdictions and the MDBA (eg the The Living Murray program) have in place.

Ecological outcomes can take time to materialise and we have made a commitment to provide regular reports in addition to the CEWH annual report which is tabled in Parliament each year and must report on achievements against the objectives of the Basin environmental watering plan. Development of a longer-term monitoring and evaluation framework is currently occurring, to align with the requirements of the Basin Plan.

Environmental water managers at all levels face considerable challenges in reconciling tradeoffs between competing environmental needs. Scientific knowledge can always be further developed and there will always be ecological uncertainty. As participants in the symposium rightly point out, adaptive management, rigorous evaluation and learning by doing will achieve ongoing improvement in outcomes. But critically, decisions on use must be made at a scale appropriate to the dimensions of the problem. The Basin as a whole is under stress and therefore basin-wide planning and management, integrated with local and regional processes, is necessary to ensure that limited environmental water goes to where it is needed most.

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