



# 3

This chapter outlines Victoria's support for the Commonwealth's aim of protecting key environmental values in the Basin. This needs to be achieved while also protecting existing entitlements.

# Sharing water resources in the Murray-Darling Basin

## Guide to the chapter

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## What is the issue with existing arrangements?

The Commonwealth Government will approve new limits on how much water can be taken from the Basin's river and groundwater systems. These limits are expected to reduce the amount of water available for consumptive use and increase allocations to the environment. They could reduce the volume and reliability of water entitlements. It is unclear how the new balance between consumptive use and the environment will be set, what the social and economic consequences will be and how these are to be managed. The Commonwealth may now make decisions alone, where previously decisions were made jointly by all the Basin states and the Commonwealth. It is unclear how the interests of the states and regional communities will be incorporated into the Commonwealth's decision making. Roles and responsibilities need to be clarified to incorporate the new Commonwealth powers created by the *Water Act 2007*.

## What improvements does the Strategy make?

- Identifies critical elements for the Murray-Darling Basin Authority to undertake in the development of the Basin Plan, including protection of existing water entitlements, thorough community engagement and consideration of the implications of climate change.
- Highlights opportunities for improved community outcomes by integrating state and Commonwealth programs, including modernisation, water purchase and structural works.
- Outlines areas of unclear accountability, together with a preferred way forward – at the heart of this is the principle that where decisions can be made effectively at a local level, this should be the case.

### 3.1 Introduction

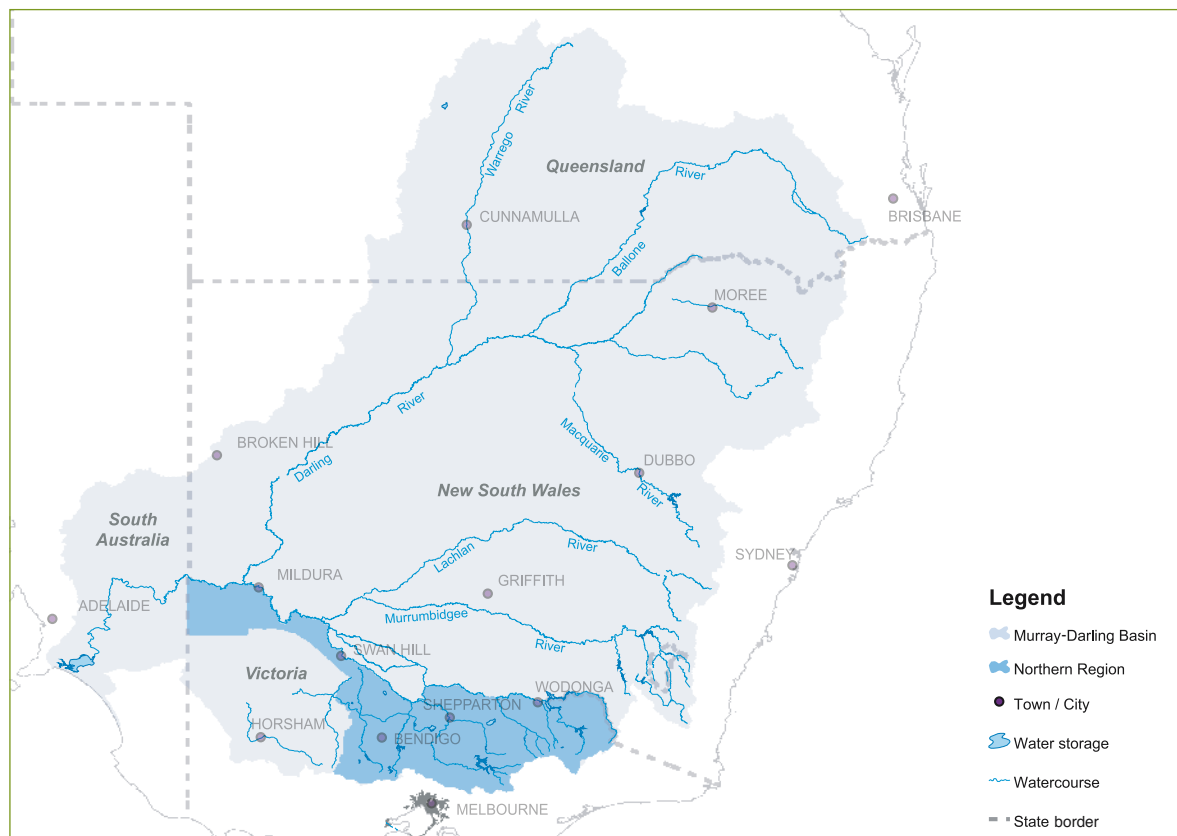
The Murray-Darling Basin extends from north of Roma in Queensland to Goolwa in South Australia and covers three quarters of New South Wales and half of Victoria (see Figure 3.1). It generates about 40 per cent of the nation’s agricultural income<sup>37</sup> and provides a vital source of fresh water for domestic consumption and industrial use. Victoria’s share of Murray-Darling Basin water resources support large areas of irrigation in the Northern Region and this water is a key factor in the region’s social fabric and ongoing prosperity.

#### 3.1.1 A history of Basin management

Spanning four states and a territory, the Murray-Darling Basin requires a unique approach to managing its water resources. For many years the 1915 *River Murray Waters Agreement* and then the 1987 *Murray-Darling Basin Agreement* provided the mechanism for cooperation between the Commonwealth, Victorian, New South Wales, and South Australian Governments. More recently, Queensland and the Australian Capital Territory joined the 1987 Agreement as signatories.

The 1987 Agreement established the Murray-Darling Basin Ministerial Council and the Murray-Darling Basin Commission. The purpose of the Council was to promote and coordinate effective planning and management for the equitable, efficient and sustainable use of the water, land and other environmental resources of the Murray-Darling Basin. Decisions made by the Ministerial Council and the Commission had to be unanimous. The Agreement set out detailed water-sharing arrangements and management of state actions that affect the quantity and quality of the shared resources of the River Murray.

Figure 3.1 The Murray-Darling Basin



In response to environmental impacts of the recent climate and levels of water use, the Commonwealth Government is now taking a greater role in Basin water management. In late 2007 it passed the *Water Act 2007*, which was further amended in late 2008 to reflect the agreements reached between Basin governments through the July 2008 intergovernmental *Agreement on Murray-Darling Basin Reform*. As a result, the Commonwealth now has greater decision-making powers and responsibilities in Basin water resource management.

The primary objective of the *Water Act 2007* is to enable the Commonwealth, in conjunction with Basin States, to manage the Basin's water resources in the national interest\*. Other objectives include to: return over-allocated or over-used water resources to environmentally sustainable levels of extraction; improve water security for all users of Basin water resources; and promote the use and management of the Basin water resources in a way that optimises economic, social and environmental outcomes.

A key element of the Commonwealth's Act is the establishment of a new independent Murray-Darling Basin Authority. The Authority is responsible for preparing a Basin Plan by 2011 for the integrated management of Basin water resources, which will be approved by the Commonwealth minister

administering the Act. The Victorian Government has negotiated that the Basin Plan will not come into effect before 2019 to provide certainty for Victorian farmers and communities during the transition period. See page 42 for further discussion of the Commonwealth's Basin Plan.

The *Murray-Darling Basin Agreement* has also been further revised and the functions of the Murray-Darling Basin Commission have been split between a new Murray-Darling Basin Ministerial Council, a Basin Officials Committee and the Murray-Darling Basin Authority. The Ministerial Council now decides changes to the Agreement, including to state water-sharing arrangements. The Basin Officials Committee advises the Ministerial Council on these changes and sets target outcomes for river operations. The Authority plans and manages river operations to deliver on these outcomes and undertakes other activities as directed by the Ministerial Council. Separately, the Authority prepares the Basin Plan for the Commonwealth Minister for Water.

Figure 3.2 shows the range of governments and authorities with responsibilities in Basin water resource management. These arrangements provide scope for considerable uncertainty but also many opportunities to work together to achieve joint outcomes. See page 49 for further discussion of these opportunities.

**Figure 3.2 Key responsibilities and planning processes under the Commonwealth *Water Act 2007***

Murray-Darling Basin Agreement		Water Act 2007	
Murray-Darling Basin Ministerial Council		Commonwealth Minister for Water	
Decides changes to state water sharing		Approves Basin Plan	
<ul style="list-style-type: none"> <li>Agrees amendments to the Agreement</li> <li>Directs Basin Officials Committee and Murray-Darling Basin Authority on river operations</li> <li>Consulted on Basin Plan</li> </ul>		<ul style="list-style-type: none"> <li>Directs Murray-Darling Basin Authority in preparing Basin Plan</li> <li>Accredits state water resource plans</li> <li>Responsibility for \$12.9 billion Water for the Future initiative</li> </ul>	
Basin Officials Committee	Murray-Darling Basin Authority		Commonwealth Environmental Water Holder
Decides river operation outcomes	Operates River Murray	Prepares Basin Plan	Manages Commonwealth environmental water holdings
<ul style="list-style-type: none"> <li>Sets river operation objectives for Authority</li> <li>Advices Ministerial Council on state water-sharing</li> </ul>	<ul style="list-style-type: none"> <li>Delivers state water</li> <li>Operational planning for water delivery</li> <li>Operates and maintains water supply and salt mitigation assets</li> </ul>	<ul style="list-style-type: none"> <li>Sets sustainable diversion limits</li> <li>Outlines environmental watering plan</li> <li>Sets water quality and salinity targets</li> <li>Sets water trading rules</li> <li>Monitors state compliance</li> </ul>	<ul style="list-style-type: none"> <li>Manages Commonwealth environmental water holdings (including use and trade) consistent with the Basin Plan</li> </ul>

Footnote:

\* The *Water Act 2007* does not define the national interest. Generally accepted criteria for determining the national interest include where there:

- are spill-over effects (eg. in the Murray-Darling Basin)
- are equity or common interest issues (eg. with social welfare support and defence)
- is a need for uniformity because a diversity of rules creates inefficiency (eg. with climate change)
- are significant or difficult issues (eg. with aboriginal health)
- are policy inter-relationships (eg. with education/training/economic performance)<sup>38</sup>.



Sultanas, Irymple

Photographer: Bob Marlin, Mallee Catchment Management Authority

### 3.1.2 Challenges for the Basin

The challenges of water resource management in the Murray-Darling Basin have never been starker than in recent years. An unprecedented sequence of dry years included record low inflows in 2006/07. Extraordinary contingency measures were required to run the River Murray at the start of the 2009/10 season. Water carting may be required to supply some towns and some domestic and stock needs. Low allocations throughout the Basin have severely affected irrigators, with some systems not receiving any allocation at all in the worst year. Many farmers have ceased irrigating, with potentially adverse flow-on impacts to their local communities. There has been an even greater reduction in the amount of water available to the environment that, among other things, has resulted in almost no breeding of colonial water birds and river red gum deaths in some areas. Tourism, recreational and cultural uses of water have all been significantly affected.

The drier climate of the past 12 years has focused community attention on the key challenge in the Murray-Darling Basin:

*How should the Basin's water resources be reallocated to reflect the changing values of the community?*

Basin governments have worked together in the past to address this through co-operative arrangements including the Murray-Darling Basin Cap and the Living Murray water recovery and works program. Through these processes, water diversions have been capped and moved from consumptive use to the environment, while protecting the reliability and tenure of water entitlements held by individuals and for towns.

The impact of the recent, unprecedented climate conditions on the environment, particularly in the lower Murray in South Australia, prompted the recent change in the way Basin water resources are managed. The increased role of the Commonwealth presents opportunities if changes are effectively developed and implemented. Victoria will work closely and cooperatively with the Commonwealth and other jurisdictions to ensure changes build on existing entitlement frameworks, knowledge and capacity.

The following sections outline the actions Victoria will take to meet the objectives of all Basin communities. The first focuses on the implementation of the Commonwealth's water programs, and the second deals with reforms of the *Murray-Darling Basin Agreement*. The final section clarifies the roles and responsibilities of each government and its institutions. In addition to the Murray-Darling Basin Authority's consultation on the Basin Plan, Victoria will implement these actions through the appropriate interstate processes of the:

- Council of Australian Governments (COAG)
- Murray-Darling Basin Ministerial Council
- Basin Officials Committee.

## 3.2 Implementation of Commonwealth water programs

In April 2008, the Commonwealth Government announced its Water for the Future<sup>39</sup> initiative, a \$12.9 billion investment in water programs over 10 years. Key elements of the initiative are the establishment of the Murray-Darling Basin Authority who will develop the Basin Plan, and a \$3.1 billion commitment to purchase water entitlements for the environment in the Murray-Darling Basin. These programs are discussed in detail in the following sections. The three aspects that will be critical to the successful implementation of these programs are:

- reflecting community values in the decisions made
- ensuring that the volume, reliability and tenure of existing entitlements is protected from changes in government policy
- integrating actions to maximise the community benefits achieved.

Other key elements of the initiative include \$5.8 billion for rural water use and infrastructure and \$1 billion for urban water use.

### 3.2.1 The Basin Plan

The Basin Plan is expected to be developed by the Murray-Darling Basin Authority and approved by the Commonwealth minister by 2011. The key element will be legally enforceable limits on the amount of water that can be taken from surface and groundwater systems, which will replace the existing Murray-Darling Basin Cap. These are expected to reduce consumptive use and increase allocations to the environment. Depending on the method used to reduce consumptive use, they could reduce the volume or reliability of Victorian water entitlements.

The diversion limits aim to be 'environmentally sustainable'. The *Water Act 2007* defines this as the amount of water that can be taken which if exceeded would compromise the key environmental assets, ecosystem functions, productive base or environmental outcomes of the water resource.

To set these limits, the Basin Plan may:

- identify the environmental assets across the Basin that are to be protected (and therefore which are not to be protected)
- determine the acceptable environmental condition of these assets
- quantify the watering regime to sustain these conditions

- identify how much water needs to be recovered to efficiently provide this watering regime (this requires knowledge about catchment hydrology, the amount of entitlement available to the environmental manager and the need for structural works and complementary measures to enable efficient watering)
- based on the above, quantify any reduction in diversion limits
- quantify the effect of any change in the limits on the volume and reliability of existing entitlements.

Other elements of the Basin Plan include:

- Basin-wide environmental objectives for water-dependent ecosystems
- water quality and salinity targets
- water trading rules.

#### Methods to comply with the new limits

In setting the new diversion limits, the Commonwealth Government should consider how water use will be reduced to comply with them. There are several methods that move water from consumptive use to the environment; some protect existing entitlements while others do not. The Victorian Government has preferred to rely on water savings, for example by modernising the distribution system (see page 113). The Commonwealth Government has also committed funding of \$1.103 billion to Victorian modernisation projects, and is investing \$3.1 billion across the Basin to purchase water entitlements for the environment (see page 133). Both of these mechanisms move water from consumptive use to the environment without impacting on existing entitlement-holders.

The Basin Plan and the new diversion limits are not able to be implemented without Victorian agreement before 2019. While the Victorian Government expects existing projects to largely address the required reduction in consumptive water use, it is possible the Plan will require further reductions. Without knowing how use will be reduced, the Authority cannot assess the socio-economic impacts of its new limits. The Commonwealth may also need to comply with its requirements to provide compensation payments, which would require detailed modelling to quantify the impact on entitlement-holders in each system.

The Victorian Government supports the Commonwealth's aim of protecting key environmental values in the Murray-Darling Basin. In setting the new diversion limits, there is a need to:

- work to the principle that fair market mechanisms are used to reduce water use, to protect existing entitlements from a reduction in volume or reliability as a result of the Basin Plan
- ensure that the requirements in the *Water Act 2007* for compensation to entitlement-holders are appropriately applied where it is not possible to protect existing entitlements from a reduction in volume or reliability as a result of the Basin Plan
- ensure the processes to reallocate water from consumptive use to the environment are fair and reasonable and reflect community values
- quantify and mitigate the impacts of this reallocation on local communities.

### Engaging regional communities

Through the Basin Plan, the Commonwealth Government can now make decisions independently, where previously decisions were made jointly by the states and Commonwealth – through unanimous agreement of the former Ministerial Council. The new arrangements mean the Ministerial Council will now only provide advice and have at least one formal opportunity to return the Basin Plan for reconsideration. This independent decision-making power means the Commonwealth minister and the Murray-Darling Basin Authority will need to develop an appropriate process to consider the views of regional communities.

Decisions about water resource management – including limits on diversions – require trade-offs that balance environmental, economic and social values. Community values must be reflected in these decisions. The Murray-Darling Basin Authority is currently developing an engagement process. This process should be developed with input from key stakeholders, including the Basin Officials Committee. The challenge will be ensuring that a transparent process is developed for making the required trade-offs that includes clear explanation and justification and gives equal consideration to economic, social and environmental impacts.

Community acceptance of the Basin Plan will play a critical role in ensuring the successful implementation of the new limits on diversions. Local groups are unlikely to agree to reductions if doing so would act to nullify their claim for compensation from the Commonwealth. Stakeholder acceptance of the new diversion limits will depend on the credibility of the information used to determine them and the level of engagement undertaken. For communities to accept reduced diversion limits, they must feel that their views have been considered in the development of the limits and that they have been treated fairly. With the release of a draft plan expected in mid-2010 and a final plan in mid-2011, this leaves little time for the Basin Authority to undertake consultation and technical analysis.

Communities are already adjusting to less water use, as a result of the last 12 years of drought and the movement of water as a result of trade. The Commonwealth's programs need to be implemented having regard to the current level of adjustment and ongoing pressures facing regional communities. The Commonwealth expects to purchase 460 GL in Victoria over the next five years (see page 45). If the remaining entitlements were affected by the most severe climate scenario (Scenario D), this would reduce water availability in the Goulburn and Murray systems by 33 per cent and the resulting adjustment issues cannot be ignored. The strategies required to support communities through this adjustment are discussed throughout this document, particularly the linking of water purchases with modernisation projects in Chapter 6. Community-based adjustment strategies are discussed in Chapter 9.

### Considering the impacts of climate change

The difficulty of protecting key environmental values under climate change has become apparent through the development of this Strategy. Existing environmental objectives are based on past climatic conditions; but with reduced water availability, it may not be possible to achieve these objectives, even if all the available water is used for environmental benefit (see page 150).

The challenge for the Murray-Darling Basin Authority is to identify key environmental values for protection and set limits that are responsive to climate change. The Murray-Darling Basin Authority will need to provide information to Basin governments and communities about how the effects of climate change will be considered when determining the environmentally sustainable diversion limits.

This challenge will be difficult, particularly in the limited time available until a draft Basin Plan is due. A strategy to adapt to reduced water availability caused by climate change should include identifying:

- climate change responsive environmental objectives
- a clear and transparent process for changing environmental, social and economic objectives
- a process for adjusting the long-term average diversion limits as a result of any change in objectives.

### Managing groundwater extractions

Groundwater extractions in the Northern Region are currently limited by PCVs (see page 68), but are not included in the existing Murray-Darling Basin Cap. The Basin Plan will set limits on groundwater extractions.

Victorian experience to date highlights the difficulty in calculating the volume of long-term average sustainable diversion limits for groundwater systems. This is due to a lack of detailed technical understanding, the impacts of climate variability, and limited monitoring and metering data. These difficulties exist for most groundwater systems across the Basin. In response, Victoria has developed management plans which restrict use when groundwater levels fall below agreed target levels, consistent with the management objectives for the system. Other systems may be allowed to decline over time where there are no corresponding groundwater-dependent ecosystems or other impacts. Future management objectives should:

- incorporate the community’s economic, social and environmental needs from the resource
- protect identified groundwater-dependent ecosystems, including the contribution to river baseflows
- protect the quality and quantity of the groundwater resource
- provide for the needs of future generations.

This approach is consistent with the management of regulated surface water systems. Groundwater over-use is effectively managed by restricting extractions consistent with existing licence conditions. The approach manages groundwater extractions without defining volumetric long-term average sustainable diversion limits.

Action 3.1: Setting limits on diversions in the Basin Plan	
<b>Who:</b> Ministers for Water, Environment and Climate Change; Department of Sustainability and Environment	<b>Timeframe:</b> Ongoing to 2011
Encourage the Murray-Darling Basin Authority to undertake the following actions when setting new diversion limits:	
<ul style="list-style-type: none"> <li>a) Consider the water recovery mechanisms available for states to comply with the diversion limits and in the Basin Plan, encourage all Basin governments to work to the principle that existing entitlements will be protected from a reduction in allocations or reliability.</li> <li>b) Reflect community values and respond to issues raised through the Basin Plan engagement process. Ideally, regional communities would have the opportunity and sufficient time to consider information about resource conditions, objectives and options to set diversion limits so that the Basin Authority can be properly informed.</li> <li>c) Undertake thorough analysis to assess the community adjustment issues arising from Commonwealth water programs and provide fair and reasonable adjustment support to water-dependent communities.</li> <li>d) Consider the impacts of climate change when setting the diversion limits. Initial steps could include identifying climate change responsive environmental objectives and a clear and transparent process to change environmental, social and economic objectives, and subsequently the diversion limits, if necessary.</li> <li>e) Identify groundwater levels that trigger the introduction of restrictions when required to protect agreed management objectives. These should be used as a proxy for long-term average sustainable diversion limits for groundwater extractions in the Basin Plan.</li> </ul>	



### 3.2.2 The Commonwealth's \$3.1 billion water purchase

The Commonwealth has committed \$3.1 billion over 10 years to purchase water entitlement for the environment in the Murray-Darling Basin<sup>40</sup>. The purchase program will move water from consumptive use to the environment.

In June 2009, the Victorian and Commonwealth Governments agreed that where the sale of water is linked to modernisation plans to provide community benefits, they will be exempt from Victoria's four per cent limit on trade out of irrigation districts (see page 108). The Commonwealth expects this will provide 300 GL over and above the water that can be purchased within the limit. Overall, the Commonwealth Government expects to purchase a total of 460 GL from Victoria over the next five years. It is not known if this, together with existing state water recovery programs, will be sufficient to ensure compliance with the new limits on diversions (see page 42). Criteria have been agreed for the first round of exemptions which total 60 GL out of the Commonwealth's 2008/09 water tender.

As part of the negotiations, the Commonwealth reaffirmed its commitment of up to \$1 billion to Stage 2 of Victoria's Northern Victoria Irrigation Renewal Project (NVRIP) and \$300 million for on-farm water efficiency works in the southern Basin. It had already committed \$103 million to improve water use efficiency in Sunraysia. Chapter 6 contains more detailed discussion of modernisation and on-farm projects (see pages 113 and 122).

This integrated approach to water purchases and modernisation is a clear example of governments working together to achieve win-win outcomes. It meets the joint aims of achieving a stable and secure future for irrigators, regional communities and the environment. It is important that these opportunities are actively sought and pursued. Another example that is immediately apparent is the integration of water purchases with investment in structural works that reduce the volume of environmental water required.

#### Integrated investment in environmental water and structural works

The science behind managing rivers and wetlands for environmental outcomes is evolving rapidly, and many lessons have been learnt about managing environmental flows during drought. The amount and

timing of such flows is critical to the protection of environmental assets. Experience has shown that it is most efficient to provide environmental outcomes in regulated systems by:

- increasing environmental flows after undertaking water recovery projects such as water savings or purchase
- transferring water entitlements to environmental managers to maximise management flexibility
- undertaking structural works and complementary measures to ensure water available to the environment is managed efficiently
- refining system operating rules to provide environmental benefit, while minimising impacts on other entitlement-holders.

With the challenge of water scarcity, the recovery of water should not be the only focus in achieving better environmental outcomes. Structural works, such as pumps and regulators, can be used to deliver environmental water and achieve outcomes with much less water (see page 137). For example, planned works at Gunbower Forest include a new channel to deliver environmental water and regulating structures to manage it within wetlands. It is estimated that only 165 GL will be required for a one-month flood, instead of 1,000 GL without the works. Structural works could be a more effective alternative than purchasing water to meet environmental flow objectives, particularly if water availability is reduced as a result of climate change.

Equally important are complementary restoration measures that protect river and wetland health, including water quality, riparian land and in-stream habitat (see page 143). These are particularly important in unregulated river systems where there is little scope to provide additional environmental flows. Unregulated systems account for about 26,000 km or 90 per cent of stream length in the Northern Region.

The Commonwealth's Water for the Future program should aim to deliver integrated environmental outcomes, achieved through an appropriate mix of environmental water, structural works and complementary measures. Consistent with an adaptive management approach, the rollout of the program should be progressive – as water is recovered and used to provide environmental benefit, this should inform decisions about the next best steps. In some cases, this may be additional water purchase, in others, additional structural works or complementary measures.

## Action 3.2: Integrated investment in environmental water and works

**Who:** Ministers for Water, Environment and Climate Change, Department of Sustainability and Environment and catchment management authorities

**Timeframe:** Ongoing to 2018

Encourage the Commonwealth Government to focus on achieving environmental outcomes as efficiently and effectively as possible, through an appropriate mix of environmental water, structural works and complementary measures. Victoria will put forward a prospectus of opportunities for structural works and complementary measures by 2010 and encourage the Commonwealth to redirect a portion of its Water for the Future funding to the construction or achievement of these works and measures.

## 3.3 Reforming the *Murray-Darling Basin Agreement*

As previously described, water sharing between Basin states is governed by the *Murray-Darling Basin Agreement*. The Murray-Darling Basin Ministerial Council oversees the Agreement and is responsible for approving any amendments.

The Agreement has traditionally been effective in managing competition for water resources and settling disputes, but the Basin governments never envisaged the extremely low inflows of 2006/07. In November 2007, the water-sharing arrangements in the Agreement were set aside to ensure that critical human water needs would be met if the 2006/07 inflows to the Murray system were repeated.

Water-sharing arrangements were further discussed at the COAG meeting in July 2008. The resulting *Agreement on Murray-Darling Basin Reform* sets out a three-tier system for water sharing (see Table 3.1), which has now been incorporated into the *Murray-Darling Basin Agreement*.

In mid-2008, the Murray-Darling Basin Commission, predecessor to the Murray-Darling Basin Authority, began work on the River Murray System Operations Review. The aim of the review is to ensure that River Murray operations deliver the objectives of the *Murray-Darling Basin Agreement* in an effective and efficient manner. The review will set out the current arrangements and provide a baseline to assess the consequences of future changes in operating rules on the distribution of shared water in the southern Basin. It will be used to support many of the actions in this section, and will also look at options to address the channel constraint issues associated with the Barmah Choke, including the Murray-Goulburn interconnector.

This effort has been given further impetus through a recent agreement by Basin governments to commence an immediate and comprehensive review of the *Murray-Darling Basin Agreement*. The initial phase of this review, now underway, is being managed by the Basin Officials Committee in accord with a set of agreed principles.

### 3.3.1 Ensuring river operation during droughts

The experience of recent years has highlighted the risk that the existing reserves\* to operate the River Murray are insufficient to deliver critical human needs under extremely dry conditions. Before water can be allocated for consumptive purposes, about 1,650 GL<sup>#</sup> is required from the states' shared resources. Temporary water-sharing arrangements and contingencies have been necessary for river operations since 2006/07.

To avoid circumstances where there is insufficient water to operate the River Murray, and to minimise the uncertainty of ad hoc water sharing arrangements, an additional reserve of water should be established. Chapter 5 outlines actions to establish similar reserves for the region's irrigation distribution systems (see page 88). The key difference is that Victoria, New South Wales and South Australia would each need to contribute water to a River Murray operating reserve.

It is estimated that a reserve of 300-400 GL is needed to ensure river operations in the following year. However, the creation of a reserve requires the transfer of water from existing consumptive entitlements to a shared reserve entitlement. The method used to create and store a reserve may change allocations to, and the reliability of, existing water entitlements in South Australia, New South Wales and Victoria. These impacts need to be assessed, and addressed where appropriate. There will potentially be different costs and benefits to entitlement-holders in each state, so before a reserve is created, a thorough analysis is needed of:

- the options for creating a reserve
- the effectiveness of the options
- the impacts of the options on the amount of water supplied to each state's entitlement-holders, particularly in dry periods
- the measures to be taken to address these impacts.

**Table 3.1 Three-tier system for Basin water sharing**

Tier No.	Title	Description
1	Normal sharing	The water-sharing arrangements set out in the 2008 <i>Murray-Darling Basin Agreement</i> continue.
2	Ensuring critical human water needs and river operating water are secured	When Tier 1 arrangements provide insufficient river operating water, the Basin Plan will establish a process to determine the necessary water-sharing arrangements to provide it if possible. As outlined in Clause 135 of the <i>Murray-Darling Basin Agreement</i> , any resulting changes to state water sharing must be approved by the Ministerial Council.
3	Extreme or unprecedented circumstances	When inflow conditions are below the worst on record, the Ministerial Council will determine the water-sharing arrangements and contingency measures.

Footnotes:

\* Clause 103 of the *Murray-Darling Basin Agreement* states that unless the Ministerial Council agrees otherwise, the minimum reserve is the lesser of: a) a third of the available water, minus South Australia's entitlement, plus any imbalance during a period of special accounting or b) 835 GL.

# This includes: 696 GL that must be provided to South Australia each year for dilution flows and the system operating component of the South Australian entitlement; 750 GL to operate the system between the upper Murray headworks storages and the South Australian border; and 200 GL for evaporation from storages.

The objective of a new river operating reserve should be to deliver water for critical human needs assuming there will be historic minimum inflow conditions and that contingency measures identified for 2009/10 continue to be available. Agreement would be helped if the following objectives and principles were adopted:

1. The southern Basin States will share the cost of creating the reserve equally, including changes in water availability to entitlement-holders.
2. Water carried over by entitlement-holders, including individuals and state governments, will be quarantined and not used for river operations.
3. Each state is responsible for ensuring critical human water needs are met within their jurisdiction.
4. Entitlement-holders will be expected to utilise water markets to manage during water shortages and governments will not enter the market to underwrite water allocations to their entitlement-holders during droughts.

It may be possible to use the environmental water from the Commonwealth Government's \$3.1 billion purchase program to support critical human needs in drought years. For example, water being delivered for critical human needs in Mildura and other towns could 'piggyback' on any environmental flows being delivered to the Lower Lakes. This would effectively reduce the amount of water needed to operate the River Murray in drought years. This is consistent with (but the reverse of) the policy outlined on page 140 to use consumptive water en route for environmental and social benefit.

### 3.3.2 Clarifying storage rights

In addition to the reserve to operate the River Murray, Victoria has its own reserves to support the reliability of its water entitlements and to ensure operation of its irrigation distribution systems. For system reserves and individuals' carryover to be effective, their security must be guaranteed. When entitlement-holders set water aside for use in the following year, they must be confident that this water will be available to them to use or trade as they need. As such, it must be 'quarantined' and not reallocated for system operations or other purpose. Without this guarantee, there is a disincentive to be efficient and use reserves and carryover as risk management tools.

The *Murray-Darling Basin Agreement* enables Victoria and New South Wales to carry over water subject to supplying 696 GL to South Australia each year. The ability to carry over water is now a right of Victorian and New South Wales entitlement-holders and is included in the market value of these entitlements. Previously, under normal circumstances, South Australia was unable to carry over water, but the upper states were obliged to supply 1,850 GL to the South Australian border each year.

The Basin First Ministers agreed in July 2008 that South Australia could carry over water to meet its critical human needs, provided this does not affect upstream states' water availability. Detailed spill rules and water accounting arrangements need to be developed to ensure there are no adverse impacts of South Australian carryover on existing water users. The storage cost of South Australia carrying over water also needs to be determined. Water ordering plans will need to be established to outline the revised pattern of supply to South Australia, together with protocols about how supply can be amended throughout the season if required.



Flooded saplings, Kings Billabong

Photographer: Bob Merlin, Mallee Catchment Management Authority

### 3.3.3 Improving water accounting

The *Murray-Darling Basin Agreement* outlines procedures to account for water allocated to and used by the states and any spills or releases from storages. Temporary periods of ‘special accounting’ are declared during water shortages to change the amount of water provided to each state and the Murray-Darling Basin Authority keeps a running record of the credits and debits for each state. Each state is provided with its own ‘special account imbalance’, but the public cannot easily access this information and they are not independently audited.

There are some water sharing anomalies that should be rectified in the *Murray-Darling Basin Agreement*. For example, the Lindsay River is an anabranch which breaks away from the River Murray about 35 km from South Australia and rejoins just upstream of the border. Victoria provides 91 GL a year out of its entitlement to reduce salinity in the Lindsay River; however the majority of this water continues on to South Australia and can be used by them in addition to their entitlement. In effect, Victoria loses about 70 GL of its entitlement to South Australia. A study has been recently undertaken to identify alternative measures to manage the saline groundwater entering the Murray. The study suggests that some water could

be provided to the Lindsay River en route as part of the normal supply of South Australia’s entitlement. This would meet the water quality requirements of diverters and maintain the high environmental assets, such as breeding grounds for Murray cod, in the Lindsay River system, while also addressing the anomaly that results in Victoria losing 70 GL. This saving would be converted to an environmental entitlement. Under Schedule B of the *Murray-Darling Basin Agreement*, Victoria would be accountable for offsetting the salinity impact by allocating a 2.4 EC salinity credit.

The Menindee Lakes storages are on the Lower Darling River in western New South Wales. The operating rules for these storages result in water in the Lakes being used solely by New South Wales under dry conditions and shared by Victoria, South Australia and New South Wales under wetter conditions. If releases from Menindee Lakes reach the Murray during dry periods, another water sharing anomaly results in a reduction in water availability for Victoria and an increase for South Australia, even though this water is accounted for as belonging solely to New South Wales. An increase in the frequency and duration of dry periods as a result of climate change will cause a disproportionate impact on Victoria.

## Action 3.3: Reforming the *Murray-Darling Basin Agreement*

**Who:** Ministers for Water and Environment and Climate Change, Department of Sustainability and Environment

**Timeframe:** Progressively by 2012\*

Encourage the Basin governments through the Basin Officials Committee and Ministerial Council to reform the *Murray-Darling Basin Agreement* in the following ways:

- a) Establish a river operating reserve to allow the delivery of critical human needs. This should assume historic minimum inflow conditions and the activation of emergency contingency measures identified for the 2009/10 year. The establishment of the reserve should be guided by agreed objectives and principles (see page 88).
- b) Explicitly state that each state retains control over water that it has carried over, and this water is not included in estimates of shared water resource availability. This includes water carried over by state governments in system reserves and by individual entitlement-holders.
- c) Develop detailed rules for South Australian storage rights and carryover arrangements for private entitlement-holders while protecting the reliability of upstream entitlements.
- d) Require the Murray-Darling Basin Authority to publish water accounts each month showing the water available to each state under the *Murray-Darling Basin Agreement*, and variations from the Agreement. These water accounts should be audited independently each year.
- e) Resolve water sharing anomalies regarding the Lindsay River and Menindee Lakes.

\* Dependent on interstate negotiations.

## 3.4 Powers, institutions, roles and responsibilities

Effective water resource management requires long-term planning arrangements that clearly:

- establish rights to water, their protections and mechanisms to transfer or reallocate rights
- define roles, responsibilities, rights and obligations of water resource managers and entitlement-holders
- prescribe the interactions between governments, water service providers and entitlement-holders.

Under the *Water Act 2007*, the Commonwealth Government now has greater powers over Basin water resource management. Given the number of institutions involved and different water resource management arrangements in each jurisdiction, this change has caused some initial uncertainty about the above points. For the new arrangements to be effective it must be clear who is responsible for what; then each government needs to structure their institutions (that is, their departments and authorities) in a way that best supports their different responsibilities.

### 3.4.1 Clarifying accountabilities

There are a number of areas where it would be useful to clarify roles and responsibilities. Although the *Water Act 2007* gives the Commonwealth Minister for Water authority to make unilateral decisions, this is based on a referral of powers from the states, and every effort should be made to align policy development with the Basin governments before final decisions are made. Effective water management in the Basin will still rely on a partnership between the states and the Commonwealth.

Table 3.2 outlines several areas of unclear accountability that need clarification as soon as possible with a view to:

- creating incentives to align water management within and between each Basin jurisdiction
- implementing ongoing and effective water reform
- avoiding conflicts of interest between water agencies
- improving the efficiency and effectiveness of day-to-day management
- providing improved and cost-effective services to water entitlement-holders
- providing maximum certainty and flexibility to entitlement-holders to manage their water supply risks.

**Table 3.2 Areas of accountability requiring clarification in the new Commonwealth water arrangements**

Area to be clarified	Suggested response
<p>The Basin Plan can set Basin-wide objectives and targets for water-dependent ecosystems, salinity and trading. In this co-management arrangement, which government is ultimately accountable for environmental outcomes? Will the Plan set environmentally sustainable extraction limits for all aquifers, including those that are highly localised and make no significant contribution to the shared surface or groundwater resources of the Basin?</p>	<p>The Basin Plan should focus on priorities at a national or Basin scale (for example, Living Murray icon sites and similar; salinity levels in the shared resources; interstate trading rules). The states should retain responsibility for regional and local priorities.</p> <p>The Murray-Darling Basin Authority should map, identify and focus on groundwater systems that contribute significantly to the shared surface water resources of the River Murray for inclusion in the Basin Plan. The states should retain responsibility for the remaining systems, where the direct benefits and costs of management decisions will be local. This includes groundwater resources along the Victorian/South Australian border.</p>
<p>While the Commonwealth Environmental Water Holder (CEWH) is responsible for managing the Commonwealth’s environmental water, it is unclear who is responsible for operational functions including water delivery, structural and complementary works. How will these arrangements support the integrated approach to environmental management agreed by COAG?</p>	<p>Clear lines of communication and processes should be established to coordinate decisions by the CEWH, Victorian Environmental Water Holder (VEWH) and catchment management authorities. These should clarify how trade-offs will be made between investment in environmental water versus structural and complementary works. Recognising the competence of state and regional entities to deliver Commonwealth environmental water will likely help this integration.</p>
<p>The Murray-Darling Basin Authority is responsible for developing water resource management policy in the Basin Plan and the delivery of bulk water supplies from the River Murray. These arrangements are inconsistent with the National Water Initiative (NWI - Clause 74) where the Commonwealth and states agreed that, as far as possible, the roles of water resource management, standard setting and regulatory enforcement and service delivery should be separated institutionally.</p>	<p>It would be preferable for the river operation functions to be institutionally and financially independent from the policy and regulatory functions of the Murray-Darling Basin Authority.</p>
<p>The Commonwealth minister has the power to make water-charging rules for the use of irrigation infrastructure, which will be enforced by the Australian Competition and Consumer Commission (ACCC). Will the ACCC duplicate the role of existing state economic regulators, including Victoria’s independent Essential Services Commission (ESC)?</p>	<p>State regulators will still be required to regulate pricing for urban water services as the ACCC has no role there. To avoid costly duplication, the ACCC should provide guidelines for rural water-charging rules and where possible accredit state economic regulators to continue to undertake the task.</p>

### Action 3.4: Clarifying powers, institutions, roles and responsibilities

**Who:** Ministers for Water and Environment and Climate Change, Department of Sustainability and Environment

**Timeframe:** 2010\*

Encourage the Commonwealth Government (through COAG and the Ministerial Council) to clarify the split of powers, roles and responsibilities in Basin water resource management, in line with principles agreed by affected governments.

Supporting institutional arrangements should be improved by:

- developing clear processes for integrating the management of environmental water with operational functions
- ensuring the river operation functions of the Murray-Darling Basin Authority are institutionally and financially independent of its policy and regulatory functions
- accrediting the Victorian ESC for economic regulation and other existing state regulatory bodies where possible.

\* Dependent on interstate negotiations.

### 3.4.2 Coordinated management of environmental entitlements

The Commonwealth's water entitlements will be held by the Commonwealth Environmental Water Holder (CEWH), established under the *Water Act 2007*. The CEWH is responsible for managing the entitlements to protect and restore the environmental assets of the Basin and will be guided by the environmental watering plan to be included in the Basin Plan. The CEWH will be responsible for managing a considerable amount of environmental water held in Victorian storages. Concurrently, Victoria's environmental entitlements will be managed by the soon to be established VEWH (see page 138). Clear accountabilities, principles and criteria must be established to coordinate the management of rivers, wetland and floodplains at the local, state and Commonwealth level to:

- improve environmental benefits
- ensure integrated, efficient and cost-effective environmental management
- provide for community involvement in environmental objective setting.

#### Roles and responsibilities in management of rivers, wetlands and floodplains

Chapter 7 outlines the split of responsibilities between regional catchment management authorities, the Department of Sustainability and Environment and the VEWH (see page 138). Ideally, the CEWH would use a similar approach to integrate its environmental water within a broader catchment management framework. This may need to be built into the Basin Plan's environmental watering plan. Essentially, catchment management authorities remain responsible for local planning, operations and engagement, including setting environmental objectives and developing watering plans. The VEWH, and preferably the CEWH, allocates its water having regard for these watering plans and provides funding for its delivery and management, including associated monitoring.

#### Suggested principles to guide interactions between the Commonwealth and Victorian Environmental Water Holders

1. Victorian environmental managers have primary accountability for the management of Victorian rivers and wetlands and should be the primary source of management information about these.
2. Commonwealth environmental water that is allocated to Victorian sites will be delivered by catchment management authorities through Victorian delivery processes (that is, Victoria's trading rules, accounting procedures and water register).
3. Where Commonwealth water is allocated from Victorian storages to non-Victorian sites, its delivery will aim to help in achieving environmental objectives for Victorian rivers and wetlands (for example, en route to downstream sites).
4. Each government will fund (through appropriate mechanisms) the delivery, monitoring and management of its own environmental water. Implementation of environmental watering will continue to be undertaken by Victorian catchment management authorities.

### Criteria to guide environmental water use

The criteria guiding the allocation of environmental water should be identical at a Commonwealth or state level. To ensure the water is put to its highest environmental use, Victoria and the Living Murray Initiative currently prioritise according to the:

- conservation significance of the site and its plants animal populations
- extent of environmental benefit (for example, the area watered or outcomes achieved)
- significance of the outcomes (for example, a large breeding event by threatened bird species)

- level of certainty of achieving the environmental benefit
- implications of not watering the site
- opportunity to maximise outcomes by integration with other sources of water
- watering history.

Water use must be cost effective and feasible, in terms of efficiency, practicality of delivery and management, and potential risks of watering, such as salinity.

## Action 3.5: Coordinated management of rivers, wetlands and floodplains

**Who:** Ministers for Water and Environment and Climate Change; Department of Sustainability and Environment; Victorian Environmental Water Holder (when established)

**Timeframe:** 2010

Encourage the Commonwealth Government to participate in coordinated management of rivers, wetlands and floodplains by agreeing on:

- roles and responsibilities in catchment management (similar to Table 7.3)
- principles to guide interactions between the Commonwealth and State Environmental Water Holders (as outlined on previous page)
- criteria to guide environmental water use (as outlined above).



Environmental watering, Crankhandle Lagoon

Photographer: Brendan Rogers, Parks Victoria