Western Region Sustainable Water Strategy

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Five-yearly assessment report



Environment, Land, Water and Planning Front cover: Lake Condah Image: DELWP

Acknowledgement of Victoria's Aboriginal communities

The Victorian Government proudly acknowledges Victoria's Aboriginal communities and their rich culture; and pays its respects to their Elders past, present and emerging. The government also recognises the intrinsic connection of Traditional Owners to Country and acknowledges their contribution in the management of land, water and resources. We acknowledge Aboriginal people as Australia's first peoples and as the Traditional Owners and custodians of the land and water on which we rely. We recognise and value the ongoing contribution of Aboriginal people and communities to Victorian life and how this enriches us. We embrace the spirit of reconciliation, working towards the equality of outcomes and ensuring an equal voice.

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Department of Environment, Land, Water and Planning

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East Melbourne 3002 Victoria

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At a glance

Wimmera River with Dimboola in background Image: Paul Lloyd

About this report

This report is of the five-yearly assessment of the *Western Region Sustainable Water Strategy* (WRSWS). Five-yearly assessments of sustainable water strategies (SWSs) do not develop new policies or actions. The WRSWS remains current and stays current until a future strategy is developed for the region.

Water for Victoria, released in 2016, requires fiveyearly assessments of all Victoria's SWSs, beginning in 2017 with the Western Region and Gippsland Region SWSs.

This five-yearly assessment report updates catchment inflow data, determines the status of each action, consolidates feedback about the process for development and implementation of the strategy and makes recommendations to support the review of the SWS. The five-yearly assessments are intended to be an intermediate check of progress with each action, given that a full review of each strategy is required at least 10 years after its publication. There is also ongoing water planning and management activity that the fiveyearly assessments both draw on and contribute to.

The WRSWS, released in November 2011, included 21 policies and 69 actions — most of which were to be completed within two years —to meet the region's water needs and to ensure sustainable management of the region's water resources for the next 50 years.

The assessment found that of the WRSWS's 69 actions:

- 11 actions either part or all of the action are being progressed through *Water for Victoria* or the *Murray-Darling Basin Plan*
- 12 actions have been partly achieved or not yet achieved
- 27 actions have been achieved and are ongoing: the strategy's requirements have been met, but ongoing effort is needed to ensure the intended outcome of the action continues to be maintained
- 19 actions have been achieved and completed: they have been completed in full.

This report explains the state of achievement of each action in the WRSWS. Each explanation references the action title but doesn't reproduce the description of the action in the strategy. For a full description of the action and its policy and other contexts, see the <u>Western Region Sustainable Water</u> <u>Strategy</u>.





actions progressed through *WfV* or the *MDBP*



actions partly achieved or not yet achieved

Recommendations

The report's recommendations aim to:

- strengthen the current requirements for monitoring and reporting on the implementation of the strategy, and reviewing it
- have DELWP coordinate a process involving organisations with responsibility for implementing WRSWS actions to develop an implementation plan for WRSWS actions.



How to navigate this report

The 'click' instructions below only work if you are viewing this report on screen and connected to the internet.



The Western Region Sustainable Water Strategy (WRSWS) report was released in November 2011 and includes 21 policies and 69 actions to meet the region's water needs and ensure sustainable management of the region's water resources for the next 50 years.

<< To read the WRSWS or its actions, click on the linked image on the left.

This is the report of the five-yearly assessment of the WRSWS. The report identifies the status of each of the strategy's 69 actions. There are four statuses.

To go to the actions with that status, click on one of the four symbols below.



Being progressed through Water for Victoria or the Murray-Darling Basin Plan: part or all of the action is being undertaken, or is a priority, or its intent is being addressed, through one or other of these plans (11 actions).



Achieved and ongoing: the action has been achieved and the strategy's requirements have been met, but ongoing effort is needed to ensure the intended outcome of the action continues to be maintained (27 actions).



Partly or not yet achieved: the action has been partly achieved or has not yet been achieved (12 actions).



Achieved and completed: the action has been completed in full (19 actions).

You can quickly find the status of an action, if you know its number. Here's what to do, using Action 3.1 as an example.

Go to the Action status summary table on the next page.

- To go to the action, click on the Action number in column 1.
- The action title is in column 2.
- The organisation(s) responsible for implementing the action are in column 3.
- To see the abbreviated names, click here.
- The action status is in column 4, using the status symbols above. Actions being progressed through *Water for Victoria* also show the relevant action in the plan.
- The action's page number in the printed version of this report is in column 5.

As with all PDF-format documents, you can also search for mentions of items of interest (such as your organisation's name) by using your browser's search function.

Actions status summary

#	Action	Responsible organisations	Status	Page
Chap	ter 3: Promoting sustainable water manageme	ent		
3.1	Providing more security to section 51 take and use licence holders	Minister for Water, RWCs, CMAs	(+) WfV 8.2	23
3.2	Improving information about domestic and stock dams	Minister for Water, DELWP, CMAs	(+) WfV 8.4	23
3.3	Requiring property owners to register new domestic and stock bores	Minister for Water, DELWP, CMAs	(+) WfV 8.4	23
3.4	Monitoring and tracking water use outside the entitlement framework	DELWP	2	33
3.5	Developing local management plans for unregulated surface water and groundwater systems	RWCs, DELWP	G	28
3.6	Reviewing the process for declaring water supply protection areas and developing statutory management plans	Minister for Water, DELWP, RWCs	\bigcirc	41
3.7	Improving information-sharing about climate variability and risks	DELWP	Ś	33
3.8	Promoting water conservation and efficiency	DELWP, water corporations	Ś	33
3.9	Streamlining the approval of section 67 storage construction licences	Minister for Water, DELWP, RWCs, CMAs	\bigcirc	28
3.10	Harvesting high flows	DELWP, RWCs, CMAs	(+) WfV 8.3	24
3.11	Extending the reticulated supply network	DELWP	Ś	34
3.12	Improving opportunities for water trading in groundwater and unregulated river systems	DELWP, RWCs, DEDJTR, CMAs	(+) WfV 9.7	24
3.13	Encouraging fit-for-purpose use of alternative water supplies	DELWP	(+) WfV 5.1	24
3.14	Balanced approach to managing unallocated water on unregulated rivers	DELWP, RWCs	\bigcirc	29
3.15	Staged release of unallocated water	RWCs	\bigcirc	29
3.16	Updating water supply-demand strategies	Water corporations, DELWP	\bigcirc	41
3.17	Review of the Victorian Uniform Drought Water Restriction Guidelines and Permanent Water Saving Rules	VicWater, DELWP	\bigcirc	41
3.18	Facilitating integrated water planning	Water corporations, LGs, DEDJTR, DELWP	\sim	34

#	Action	Responsible organisations	Status	Page
3.19	Promoting sustainable water management on dryland farms	DELWP, DEDJTR	$\langle \rangle$	34
3.20	Using consumptive water en route	DELWP, water corporations, CMAs	\sim	34
3.21	Managing riparian land	CMAs, DELWP	\sim	35
3.22	Changing environmental management objectives	CMAs, DELWP	\sim	35
3.23	Considering water impacts when undertaking planned burning and other bushfire control measures	DELWP	\sim	35
3.24	Developing capacity for Aboriginal involvement in water management	DELWP, CMAs, water corporations	\sim	35
Chap	ter 4: Making the best use of the region's grou	ndwater resources		
4.1	Revising groundwater management units	DELWP, RWCs	\bigcirc	42
4.2	Managing short-term variability in groundwater systems	RWCs	\sim	36
4.3	Undeclaring water supply protection areas	RWCs	\bigcirc	42
4.4	Facilitating groundwater trading	RWCs	\bigcirc	29
4.5	Developing groundwater trade between South Australia and Victoria	DELWP	\bigcirc	29
4.6	Strategic groundwater resource assessments	DELWP, RWCs	\sim	36
4.7	Groundwater/ surface water interactions	DELWP, RWCs, CMAs	\bigcirc	42
4.8	Auctioning water where groundwater systems have additional capacity	RWCs	\sim	36
4.9	Upgrading and refining the monitoring network	DELWP, RWCs, environmental managers	\bigcirc	43
4.10	Establishing secure, ongoing funding for future maintenance and renewal of the monitoring network	DELWP, RWCs, environmental managers	2°	36
4.11	Develop Ministerial guidelines for groundwater dependent ecosystems	DELWP, RWCs, CMAs	\bigcirc	43
4.12	Emerging technologies	DELWP, DEDJTR	\sim	36

#	Action	Responsible organisations	Status	Page		
Chap	Chapter 5: Managing adverse water resource impacts from land use					
5.1	Statewide recording of water use by land use changes	DELWP	\bigcirc	30		
5.2	Reviewing models and recommending methods for improving estimates of whole- of-catchment water use	DELWP	\bigcirc	43		
5.3	Amend the <i>Water Act 1989</i> so that intensive management areas can be declared to control water-intensive land use changes in these areas	DELWP	(+) WfV 8.4	25		
5.4	Guidelines for rapidly assessing new forestry development proposals	DELWP, RWCs	(+) WfV 8.4	25		
5.5	Considering cumulative impacts of land use in decisions about water use	DELWP, RWCs	(+) WfV 8.4	25		
5.6	Appointing regional committees to assess intensive management areas	DELWP	(+) WfV 8.4	26		
5.7	Reviewing implications of the <i>Murray-</i> <i>Darling Basin Plan</i> for managing the water impacts of land use change	DELWP	<i>2</i>	37		
Chap	ter 6: The Wimmera Mallee Pipeline & Wimmer	a-Glenelg system				
6.1	Reviewing operation of the bulk entitlements	GWMW, WW, CW, VEWH, CMAs, DELWP	\bigcirc	44		
6.2	Collaborating to improve efficiency	BE holders, storage manager, resource manager, environmental managers, DELWP	\sim	37		
6.3	Sale of the growth water	GWMW	\sim	37		
6.4	Improving the efficiency of operating the supply system	GWMW	Ś	37		
6.5	Considering more efficient headworks management	GWMW, DELWP, environmental managers	\bigcirc	44		
6.6	Efficient operation of lakes Lonsdale and Toolondo	GWMW, DELWP, environmental managers	\bigcirc	44		
6.7	Sharing any additional water savings in the supply system	GWMW, DELWP, environmental managers	\sim	38		
6.8	Managing the Wimmera-Glenelg environmental entitlement	VEWH, CMAs, DELWP	Ś	38		
6.9	Developing rules for diverting river flows for recreation in wet years	GWMW	\bigcirc	44		

#	Action	Responsible organisations	Status	Page
Chap	oter 7: The Otways			
7.1	Revised caps on the amount of unallocated surface water available for winter-fill diversions in Otways catchments	DELWP, SRW, CMAs	\bigcirc	30
7.2	Revising urban water supply-demand strategies	BW, WW	\bigcirc	45
7.3	Improving environmental flows in the Gellibrand River	CCMA, WW, SRW, DELWP	\bigcirc	30
7.4	Investing in integrated catchment management to improve Otway waterways	DELWP, CCMA	Ś	38
Chap	oter 8: The South-west Coast			
8.1	Revised caps on the amount of unallocated surface water available for winter-fill diversions in the South-west Coast	DELWP, SRW, GHCMA	\bigcirc	31
8.2	Revising urban water supply-demand strategies	WW	\bigcirc	45
8.3	Preserving cultural values of Lake Condah	DELWP, SRW	\bigcirc	31
8.4	Improved environmental flows for the Merri River	DELWP, SRW, GHCMA, local water user representatives	\bigcirc	45
8.5	Investing in integrated catchment management to improve South-west waterways	DELWP, GHCMA	2	38
Chap	oter 9: The Western District			
9.1	Revising urban water supply-demand strategies	BW, WW, CHW, GWMW	\bigcirc	46
9.2	Restoring Lake Corangamite	CCMA, DELWP	\bigcirc	31
9.3	Investing in integrated catchment management to improve Western District waterways	DELWP, CCMA, GHCMA	Ś	39

#	Action	Responsible organisations	Status	Page	
Chap	Chapter 10: The North-west sub-region				
10.1	Revising urban water supply-demand strategies	GWMW, CHW, CW	\bigcirc	46	
10.2	Management of the Upper Wimmera River	GWMW	\bigcirc	46	
10.3	Investing in integrated catchment management to improve waterways	DELWP, WCMA	Ś	39	
10.4	Development and implementation of the <i>Murray-Darling Basin Plan</i> in the Wimmera and Mallee catchments	DELWP	+ MDBP	26	
10.5	Protecting flows in the Millicent Coast Basin	SRW, GWMW	\sim	39	

Abbreviations

Abbreviation	Title
BW	Barwon Water
BE holders	Bulk entitlement holders
СНЖ	Central Highlands Water
СМА	Catchment Management Authority
cw	Coliban Water
ССМА	Corangamite Catchment Management Authority
DEDJTR	Department of Economic Development, Jobs, Transport and Resources
DELWP	Department of Environment, Land, Water and Planning
GHCMA	Glenelg Hopkins Catchment Management Authority
GWMW	Grampians Wimmera Mallee Water
LGs	Local governments
MDBP	Murray-Darling Basin Plan
RWCs	Rural water corporations
SRW	Southern Rural Water
VEWH	Victorian Environmental Water Holder
ww	Wannon Water
WCMA	Wimmera Catchment Management Authority
WfV	Water for Victoria

Lake Colac boardwalk Image: Sal Ahmad, DELWP

1 miles

12

1. Introduction



About the Western Region Sustainable Water Strategy

The **Water Act 1989** empowers the Minister to prepare sustainable water strategies (SWSs) for a region of Victoria. SWSs are long-term plans for water resources in Victoria. They identify threats to water supply and quality, and they include actions to help water users, water corporations and catchment management authorities (CMAs) manage and respond to risks over the next 50 years.

The Western Region Sustainable Water Strategy

(WRSWS) was released in November 2011. It aims to ensure sustainable management of the region's water resources — by managing demand for and securing an adequate supply of water — for the region's people, industries and the environment over the 50 years to 2055.

The strategy's vision for the Western Region's water future is:

'The Western Region community will work together to achieve a future where healthy rivers, lakes, estuaries and aquifers support a healthy environment and regional prosperity, providing water security for individuals, agriculture, industry and the environment, and access to water resources for the benefit of current and future generations.'

To achieve this vision, it includes 21 policies and 69 actions to be implemented at the regional and local scales. These policies and actions aim to provide increased certainty to water users and the environment, promote sustainable water use and protect and improve the health of the waterways, aquifers, wetlands and estuaries.

Actions also aim to resolve some of the region's major water resource issues. These include the need

to improve groundwater management, manage the adverse impacts of land use changes on water availability and manage the Wimmera Mallee Pipeline and the Wimmera-Glenelg system.

The strategy's policies and actions were particularly intended to:

- understand and address challenges to water availability and quality, and to the health of rivers, aquifers and wetlands arising from climate risk
- help regional communities better manage dry periods
- secure entitlements to water for towns, industry and the environment
- ensure a reliable supply of water for economically viable, sustainable agriculture
- recognise and respond to the Aboriginal and other cultural and heritage values of the region's rivers and catchments.

The WRSWS included seven principles to guide the policies and actions. They were:

- maximising efficiency and seeking multiple benefits
- shared responsibility and shared benefit
- recognising existing rights and entitlements
- allowing individuals to manage their own risk and exercise their choices
- being prepared without acting prematurely
- maintaining healthy environments and maximising environmental outcomes
- socially responsible decision-making.

The WRSWS (together with the Gippsland Region SWS) was the last Victorian SWS to be published, the Central Region SWS having been published in 2006 and the Northern Region SWS in 2009. All the strategies are available on DELWP's <u>website</u>.

About the Western Region

Figure 1 shows the Western Region. It extends from the southern Mallee to Victoria's south-west coast and from the South Australian border in the west to the Avoca, Corangamite and Gellibrand rivers in the east. The region includes the Avoca, Wimmera-Avon, Millicent Coast, Glenelg, Portland Coast, Hopkins, Lake Corangamite, Otway Coast and parts of the Mallee catchments, as well as several groundwater systems.

The region has many important rivers, wetlands and estuaries including the lake Condah and the Ramsar-listed Western District lakes and lake Albacutya. Rivers, lakes, wetlands and estuaries have high environmental and cultural value, and they are important for tourism. Water resources and water use vary widely across the Western Region. The south has relatively reliable rainfall, and conditions become drier to the north. The south and west have good groundwater reserves. Supply systems transfer some of the water from wetter areas to support towns, farms and industry in drier parts of the region. Agricultural industries (such as diary production, grazing and broadacre cropping), cities and towns and industries (such as mineral sands mining, alternative energy and forestry plantations) are the major water users in the region, relying on groundwater (which is 37% of total water use) and surface water (which is 62% of total water use). Alternative supplies (such as recycled water) make up the remaining 1%.



Figure 1: The Western Region

About the five-yearly assessment

In October 2016, the Victorian Government released *Water for Victoria (WfV)*, which requires five-yearly assessments of the SWSs, beginning with the Western Region and Gippsland Region SWSs (which were both released in 2011). The five-yearly assessments look back, to identify any key trends and issues to be taken up by future reviews. They offer the opportunity to consider reprioritising or refocusing some actions and to identify barriers to implementing actions. The five-yearly assessments do not develop new policy or actions.

Figure 2: Five-yearly assessment development process



Figure 2 shows the process for developing the five-yearly assessment. It started with DELWP commissioning consultants in 2016 to do a stocktake to determine the state of achievement of the strategy's 69 actions. It then engaged other consultants to consult with stakeholders involved in developing and/or implementing the strategy to update the 2016 findings in 2017–18. Their report forms the basis of the state of achievement reported for each WRSWS action in this assessment report.

The approach to producing the five-yearly assessment reports emphasises consultation. Stakeholders involved in developing and implementing the WRSWS were interviewed, and a workshop was held with representatives of organisations implementing the strategy. Stakeholders were also invited to comment on drafts of this report. This report of the five-yearly assessment of the WRSWS contributes to the future review of the WRSWS by:

- identifying the status of each of the strategy's 69 actions
- recognising achievements so far and identifying learnings
- making recommendations to strengthen current monitoring and reporting requirements and for DELWP to coordinate a process to develop an implementation plan for WRSWS actions.

Water security challenges

The Millennium Drought

The recent history of the region saw the occurrence of the Millennium Drought, which began with low rainfall in late 1996 and ended in 2010. It resulted in the lowest inflows on record into many of the region's catchments.

The low rainfall plus above-average temperatures resulted in extremely dry conditions that put unprecedented pressure on water resources. The WRSWS was developed against this backdrop.

Parts of the Western Region were hit harder than any other part of the state, with rainfall throughout the region well below long-term averages. During the drought, the region's annual average streamflows fell by 30% to 90%. Large lakes (such as lakes Bolac and Corangamite) experienced uncharacteristic drying. Average annual streamflows in the Avoca River (to the north) fell by 88%, compared with the long-term average. Annual streamflows in the Merri River (to the south) fell by 55%. These streamflows were far less than the worst-case forecasts of the region's water managers.

As the drought progressed, communities in the north-west faced prolonged and severe water restrictions, and southern and coastal towns increased their reliance on groundwater resources. The reliability of supply for stock and domestic users became increasingly uncertain. There was not enough water to run the Wimmera-Mallee delivery system. Sometimes, water carting was the only way to provide water for essential domestic and stock needs.

As flows diminished in streams, licensing authorities progressively introduced further restrictions on diversions for irrigation and commercial use. They imposed bans in many streams to ensure enough water remained to meet essential domestic, stock and environmental needs. During the drought, the Minister for Water qualified rights to water to ensure water corporations could continue to supply their customers' critical needs. Groundwater extractions increased as people searched for other sources of supply, and concerns increased about the possible impact of groundwater extractions on already variable streamflows. Figure 3 shows annual streamflows from 1995 (shortly before the drought started in late 1996) to 2017 for the Wimmera River at Glynwylin and for the Merri River at Woodford. It shows that during the drought period, for most years and for both rivers, the annual streamflow was well below the long-term mean annual flow. For the Wimmera River, the Millennium Drought mean annual flow was about one-fifth of the long-term average, and about half for the Merri River.

The Wimmera Mallee Pipeline Project, which started in late 2006, proved more important for securing water in parts of the region than initially anticipated. The pipeline was completed five years ahead of schedule (in 2010), in part because the dry weather allowed for almost year-round construction. It enabled towns and domestic and stock customers to receive emergency supplies through the pipeline, rather than by carting them.

When the WRSWS was being developed in 2009 and 2010, water managers saw drought as the biggest risk to the future availability of water. The big lessons of the drought were that the region's water supplies need to be reliable, that users need to use water efficiently and that everyone needs to be able to adapt to prolonged, dry conditions as well as very wet periods. These perspectives framed the policies and actions in the WRSWS and continue to frame policies and actions in a drought-prone land.



Lake Bolac during the drought Image: Alison Pouliot



125,000



Figure 3: Wimmera and Merri rivers streamflows and related water policy events, 1995–2017



As Figure 3 shows, the drought ended in 2010–11 with above-average rainfall: almost two-thirds of the state had rainfall well above the long-term average. Parts of the Western Region had their wettest January on record in 2011, and there was extensive flooding. Since then, conditions have differed markedly across the region. In the south-west, streamflows have been in line with the long-term average but the Wimmera has returned to extremely dry conditions with streamflows even lower than during the peak of the Millennium Drought. Environmental releases have increased the flow in downstream sections of the Wimmera River.

Water challenges the WRSWS identified

Apart from the major impact of the drought, the WRSWS identified other pressures on water resources in the short, medium and long terms.

Climate change was identified as a major risk to water security. Streamflows in the inland river basins were predicted to fall by between 12% and 90% of the recorded averages, and by between 19% and 65% in the coastal river basins. Unconfined aquifers and smaller groundwater systems were also identified as sensitive to climate change. The populations of regional centres were forecast to increase, although the populations of rural areas would fall as people move to urban centres. Towns in the region's south were forecast to have the biggest population increases: for example, Warrnambool's population was forecast to increase by 36% by 2036.

The WRSWS identified that industrial water needs were changing. It identified that food and fibre production was growing in the region's south; the alternative energy industry (such as gas, wind, geothermal and wave energy power plants) was growing; and mineral sands mining was occurring west and north of the Grampians. The WRSWS predicted that intensive animal, horticultural and agricultural industries would grow after the Wimmera Mallee Pipeline was built. These industries need secure water supplies to continue to grow, which increases pressure on water resources.

Growing populations and rural subdivisions increase demand for domestic and stock water. During the Millennium Drought, many of the region's farmers enlarged their dams or created new dams and installed domestic stock bores, to improve the reliability of their water supplies. However, such investments reduce the water resources available for other users and the environment.



The WRSWS identified land use changes as potentially reducing surface and groundwater resources, which would affect water quality, carbon storage and biodiversity. An example is the expansion of blue gum plantations from 1995 to 2010 in the region's south-west. Plantation forestry is a major industry in the region, and it offers opportunities to mitigate climate change impacts: plantations remove greenhouse gases from the atmosphere, contributing to the state's goal of net zero greenhouse gas emissions by 2050. They can also help reduce soil salinity. However, the rapid replacement of pastures with blue gum plantations in the Glenelg Hopkins catchment during the Millennium Drought raised serious concerns about the plantation's social and water resource impacts. Cropping and perennial pasture planting are also increasing, and both activities use more water than the annual pasture they often replace.

The WRSWS also identified bushfires as an additional (although natural) pressure on water resources in the region, and the effects of bushfires on surface run-off and groundwater levels can last up to 120 years. Bushfires (such as those in 2009) can also interrupt water supplies in the short term and greatly reduce water quality in the following months. Poor water quality includes salinity, high sediment and nutrient loads, changing pH levels and temperature and low dissolved oxygen. Water quality in the region is also reduced by agricultural run-off, point-source pollution, land salinisation (salinity being a major water quality issue in the region), saltwater intrusion, acid sulphate soils, blue-green algae blooms and low river flows.

2. Status of strategy actions



The WRSWS includes 21 policies and 69 actions, most of which were to be completed in the first two years. The main organisations involved in implementing WRSWS actions are DELWP, rural and urban water corporations and CMAs. As Table 1 shows, at this time — seven years from the release of the strategy and three years before it is to be reviewed — 46 of the 69 actions — over two-thirds of the actions — have been achieved, 11 are being progressed through *WfV* or the *MDBP* and 12 have been partly or not yet achieved. DELWP acknowledges that actions which have been assessed as achieved and completed, achieved and ongoing, partly achieved and not yet achieved may not always have resulted in the outcomes stakeholders or communities expected from the action.

Recommendation 2 — to develop an implementation plan for WRSWS actions by March 2019 — provides a further opportunity for responsible organisations, stakeholders and communities to work together to identify how ongoing actions and the completion of partly achieved and not-yet-achieved actions can support the realisation of expected outcomes.

Action status		Status meaning	#
(+)	Actions being progressed through <i>Water for Victoria</i> or <i>Murray-Darling Basin Plan</i>	Part or all of the action is being undertaken, or is a priority, or its intent is being addressed, through <i>WfV</i> or the <i>MDBP</i> .	11
	Actions partly or not yet achieved	The action has been partly achieved or has not yet been achieved.	12
\sim	Actions achieved and ongoing	The action has been achieved and the strategy's requirements met, but ongoing effort is needed to ensure the intended outcome of the action continues to be maintained.	27
\bigcirc	Actions achieved and completed	The action has been completed in full.	19

Table 1: Status of WRSWS actions

TOTAL



69



(through Water for Victoria or Murray-Darling Basin Plan)

There are the 11 WRSWS actions that are being progressed — the whole action or parts of it — through *WfV* or the *MDBP*.

When the WRSWS was developed, achievement of many of these actions required amendments to the *Water Act 1989.* The necessary amendments were proposed in the Water Bill 2014, but the Bill did not proceed. *WfV* addresses these actions, capturing their intent and re-examining the most appropriate mechanism to progress that intent.

The WRSWS Chapter 3 actions — **3.1**, **3.2**, **3.3**, **3.10**, **3.12** and **3.13** — relate to promoting sustainable water management. They are being progressed through several *WfV* actions. *WfV* includes an implementation plan that names, for each action, the lead delivery agency and partners and the timeframe for achieving it.

The WRSWS Chapter 5 actions — **5.3**, **5.4**, **5.5** and **5.6** — relate to the management of intensive forestry industries. They are being progressed through *WfV* action 8.4, which focuses on better recording and reporting of emerging significant uses of water.

The WRSWS proposed to manage plantation forestry water use (as the biggest land use interceptor of water in a catchment) by:

- recording of water use by land use changes (WRSWS action 5.1 – partly or not yet achieved)
- reviewing models and recommending methods for improving estimates of whole-of-catchment water use (WRSWS action 5.2 achieved and completed)

- changes to legislation to enable the Minister for Water to declare and manage intensive management areas (WRSWS action 5.3 – being progressed through *WfV* action 8.4)
- within intensive management areas, making decisions to ensure that intensive land uses are considered, to include the water they use (WRSWS actions 5.4 and 5.5 – being also progressed through *WfV* action 8.4)
- having regional governance assess impacts in intensive management areas (WRSWS action 5.6 – being also progressed through *WfV* action 8.4).

As 'Managing the impacts of adverse land use changes' on page 22 explains, drivers for large-scale forestry have changed greatly since 2011, with the total area under forestry in south-west Victoria reducing. However, *WfV* recognises that large-scale changes in land use could still affect water availability by intercepting water that would otherwise reach streams and aquifers. This can affect the water resource, entitlement holders and the environment. It recommended (*WfV* action **8.4**) better recording and reporting on emerging significant uses of water.

The WRSWS Chapter 10 action — **10.4** — is given effect through the *Wimmera-Mallee Water Resource Plan*, which has been completed and submitted to the Murray-Darling Basin Authority (MDBA) for formal assessment.

The *Delivering Water for Victoria Progress Report* provides the action status for all actions in *WfV*.

Chapter 3: Promoting sustainable water management

(+) Action 3.1: Providing more security to section 51 take and use licence holders.

Action linked to: WfV 8.2 Provide greater flexibility and choice for licence holders

This action was to increase certainty for water users and the environment. The Water Bill 2014 proposed to extend section 51 take and use licences to 20 years, but it did not proceed through parliament.

Investigating the merits of converting take and use licences (section 51 licences under the Water Act) in unregulated surface water and groundwater systems into water shares and other related products is being pursued through *WfV* action 8.2.

)Action 3.2: Improving information about domestic and stock dams

Action linked to: WfV 8.4 Better record and report on emerging significant uses of water

This action was to improve knowledge of farm dams to enhance understanding of overall water harvesting within a catchment. The Water Bill 2014 proposed amendments to do this, but it did not proceed through parliament. Regulations requiring registration of new and modified farm dams in rural residential areas were revoked in 2017 after a review found they did not achieve their purpose and were an unreasonable burden on dam owners. *WfV* committed to recording and reporting on all emerging, significant uses of water including investigating a reasonable-use limit for domestic and stock rights under Section 8 of the Water Act.

The investigation concluded that a reasonable-use limit on water use for domestic and stock could not be implemented nor be effective without a change to the *Water Act 1989* to give the Minister the ability to set a limit. Further stakeholder consultation is needed to determine what domestic and stock use poses a risk, what is a reasonable-use limit and whether it is the most effective method to manage the growth in domestic and stock water use.

WfV action 8.4 maintains this as a priority.

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(+)) Action 3.3: Requiring property owners to register new domestic and stock bores

Action linked to: WfV 8.4 Better record and report on emerging significant uses of water

This action was to improve knowledge about the use of bores for stock and domestic purposes. The Water Bill 2014 proposed amendments to do this, but it did not proceed through parliament. *WfV* commits to improved monitoring and reporting on significant uses of water through the Victorian Water Accounts.

WfV action 8.4 maintains this as a priority.

) Action 3.10: Harvesting high flows

Action linked to: *WfV* 8.3 Investigate increased flexibility for taking water under winter-fill licences

This action was to help explore more-adaptive water-extraction options through the capture of high flows outside the winter-fill period. DELWP investigated the option of providing access to high flows (outside the winter-fill period) and although diversion opportunities would be highly unreliable, guidelines are proposed to permit high-flow extraction on a case-by-case basis.

WfV action 8.3 maintains this as a priority.

Action 3.12: Improving opportunities for water trading in groundwater and unregulated river systems

Action linked to: WfV 9.7 Develop trading rules in other water systems

This action was to support increased access to water by improving the ability to trade in groundwater and unregulated systems. The WRSWS helped put more information about water markets on the Victorian Water Register website, and Southern Rural Water established its <u>WaterMatch</u> website for buyers and sellers to contact each other. Updates to statutory management plans and the increased use of local management plans have improved the documentation of trading rules that reflect the areas to which they apply, but this has not always resulted in increased opportunities for trade. Water corporations have introduced intensity rules to reduce the cost of assessments for temporary and permanent transfers of groundwater licences. <u>Take and use licensing policies</u> were amended to permit temporary transfers for a period of up to five years in specified circumstances, which reduced administrative costs. DELWP reports annually on surface water trading and has released the <u>Effectiveness of Victoria's Water Markets</u>, the first statewide review of the effectiveness of Victoria's water markets) and the first report on early trends in groundwater trade. The previous report identified that the main requirements for further development of groundwater markets are the need to set caps, allocation of available water, refinement of management area boundaries and education of licence holders.

WfV action 9.7 maintains water trading as a priority by encouraging the refinement of trading rules and exploring opportunities to further develop markets in western Victoria, reviewing statewide unregulated surface water trading rules and developing policy to facilitate trade in groundwater systems.

) Action 3.13: Encouraging fit-for-purpose use of alternative water supplies

Action linked to: WfV 5.1 Use diverse water sources to protect public spaces

This action was to explore the use of fit-for-purpose alternative water supplies to provide benefits to communities and reduce demand on potable water supplies. Alternative water sources — mainly recycled water, stormwater and desalinated water — can improve amenity and alleviate pressures on stressed water systems. Shortly after the WRSWS was published, water supply demand strategy guidelines to consider alternative water supply were published and such consideration continues to be a part of water corporations' most recent urban water strategies.

<u>Policies</u> for the assessment and approval of local desalination systems and for brine disposal management were released in 2013.

WfV action 5.1 maintains it as a priority, and stormwater allocation is being discussed across Victoria in integrated water management forums.

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Chapter 5: Managing adverse water resource impacts from land use

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) Action 5.3: Amend the *Water Act 1989* so that intensive management areas can be declared to control water-intensive land use changes in these areas

Action linked to: WfV 8.4 Better record and report on emerging significant uses of water

This action focused on amending the *Water Act 1989* to enable the Minister for Water to declare and manage an area according to the process explained in the WRSWS. To better manage the impact of land use change on water resources, the WRSWS proposed a process to declare intensive management areas, based on the intensity of water stress, the significance of water-dependent values and the potential for land use changes to affect these values. Intensive management areas would have specific rules and management actions to ensure the integrity of high-value water systems are maintained. Amendments to the Act to declare intensive management areas were proposed in the Water Bill 2014, but the Bill did not proceed through parliament.

WfV action 8.4 recognised the importance of water-intensive land use changes and proposes an approach to gain better information about the impacts of changes in land use on water resources. This work will inform the review of the WRSWS about the risks to water resources and whether action is required to mitigate them.

(+)) Action 5.4: Guidelines for rapidly assessing new forestry development proposals .

Action linked to: WfV 8.4 Better record and report on emerging significant uses of water

This action was for DELWP to develop guidelines to ensure applications for new forestry developments in a declared area could be assessed readily. Amendments to the Act to declare intensive management areas (explained above in action **5.3**) did not occur, so the guidelines have not yet been developed.

WfV action 8.4 maintains understanding the impacts of land use changes on water resources as a priority.

Action 5.5: Considering cumulative impacts of land use in decisions about water use

Action linked to: WfV 8.4 Better record and report on emerging significant uses of water

This action was to gain an improved understanding about the impact of land use changes on water quantity and quality, to make more informed decisions about water use. The WRSWS recognised that land use changes from forestry and changing agricultural practices could make less water available and reduce water quality. Amendments to the Act to declare intensive management areas (explained above in action **5.3**) did not occur, so this action has not progressed as planned.

Action 8.4 of *WfV* maintains the emphasis on considering land use impacts on water availability by better recording and reporting on significant uses of water in the Victorian Water Accounts.



) Action 5.6: Appointing regional committees to assess intensive management areas

Action linked to: WfV 8.4 Better record and report on emerging significant uses of water

This action was for the Minister for Water to appoint regional committees to assess intensive management areas. The WRSWS identifies areas that could be declared as intensive management areas — areas where managing the impacts of land use changes on water availability could be a high priority — and the action was to appoint regional committees to consider if these areas should be declared. Amendments to the Act to declare intensive management areas (explained above in action **5.3**) did not occur, so this action has not progressed as planned.

WfV action 8.4 maintains the emphasis on considering land use impacts on water availability by better recording and reporting on significant uses of water in the Victorian Water Accounts.

Chapter 10: The North-west sub-region

Action 10.4: Development and implementation of the Murray-Darling Basin Plan in the Wimmera and Mallee catchments

Action linked to: Murray-Darling Basin Plan: Wimmera-Mallee Water Resource Plan

This action was to assist with the development and implementation of the *Murray Darling Basin Plan* in the Wimmera and Mallee catchments. While the Wimmera, Avon and Richardson rivers don't flow to the River Murray, the basin plan applies to these catchments. The Victorian Government has worked with the Murray-Darling Basin Authority to ensure elements of the plan that apply to the Western Region can be implemented with minimal disruption to water users.

The Victorian Government submitted the *Wimmera-Mallee Water Resource Plan* to the MDBA for formal assessment on 29 June 2018. The MDBA will assess the plan and make a recommendation to the Commonwealth Minister for Agriculture and Natural Resources as to whether the plan should be accredited. The plan shows how Victoria will comply with sustainable diversion limits on the volume of surface water and groundwater that can be taken and used in catchments from 1 July 2019.



Improving accounting for water outside entitlement framework

Actions **3.2** and **3.3** aim to improve accounting for water outside of the entitlement framework. The actions require stock and domestic bores and dams to be registered, requiring potential amendments to the *Water Act 1989*. The amendments were proposed in the Water Bill 2014, but the Bill did not proceed through parliament. The WRSWS noted that more than 50% of the average 464 GL/year of surface water available annually in the region for consumption is captured in small catchment dams for domestic and stock use. This capture is a private right and not licensed by volume. Continued growth in domestic and stock use is expected to increase in the region and in other parts of the state. For this reason, better managing and accounting for this use remains a priority, and *WfV* action 8.4 addresses this issue.

Managing the impacts of adverse land use changes

At the time the WRSWS was being developed, a major expansion of blue gum plantations was underway in the region. The industry's rapid expansion raised concerns about the potential effects on the region's water resources, and the strategy addressed these concerns. However, actions to address these concerns (such as action 5.3 to declare hot-spot areas to control water-intensive land use, action 5.4 to develop guidelines to rapidly assess new forestry development proposals and action 5.6 to appoint regional committees to assess intensive land use areas) needed amendments to the Water Act 1989. The amendments were proposed in the Water Bill 2014, but the Bill did not proceed through parliament.

In the event, the total area of plantation forests in the region did not increase in 2014–17, largely due to overinvestment in the industry, less international demand and the realisation that many plantations were in marginal areas. There are still community concerns in the region about the effects of land use changes plantation forestry — on water resources, especially with the added effects of climate change. This now includes the effects of changing agricultural practices (such as the move from grazing to annual cropping and the use of new technologies and products to retain soil moisture, which can reduce run-off).

Expansion of food and fibre production is a continuing pressure on water resources in parts of the region. When the WRSWS was developed, the region's agricultural production was an estimated \$3.1 billion. In 2016–17, this had increased to \$4.6 billion, largely due to more broadacre cropping and dairying.

As such, the effects of land use changes are still being investigated. Although there are few new plantations, DELWP modelling in 2018 indicates that plantations and other land use changes are intercepting significant volumes of water. DELWP is continuing to research this topic as part of actions in *WfV*.



There are 12 WRSWS actions that have been partly achieved or are not yet achieved and have not been directly picked up in *WfV* or the *MDBP*. The actions were scheduled to be completed in 2012 or 2013.

Chapter 3: Promoting sustainable water management

Action 3.5: Developing local management plans for unregulated surface water and groundwater systems

This action is to document existing management rules into local management plans (LMPs), to provide transparent water management. The action is well-progressed and ongoing.

LMPs are to be developed in line with DELWP guidelines, which were released in May 2014, and be publicly available on rural water corporations' websites.

For this assessment, an LMP is considered complete when the existing rules are documented and published on the rural water corporation's website. If the rural water corporation responsible for developing an LMP considers the existing rules sufficient and effective, only documentation is required. Therefore, many of the unregulated surface water and groundwater LMPs are documentation of existing rules only.

LMPs established for surface water in the Western Region include for the Otway Coast, Hopkins, Portland Coast, Avoca River, Glenelg and Wimmera-Avon. Lake Corangamite, Mallee, Millicent Coast and Hopkins will be investigated in the future. Also, LMPs were to be developed for some groundwater systems. The *Hopkins-Corangamite Groundwater Catchment Statement* includes the local management plan for the Colongulac, Glenormiston and Gellibrand GMAs. The West Wimmera GMA has replaced the areas of Balrootan, Kaniva TCSA, Goroke, Little Desert and Nhill. These areas are now covered by the *West Wimmera Groundwater Management Strategy 2011.*

The action also includes reviewing some existing rules. Examples where this has occurred are the Heywood, Hawkesdale, Portland, Nullawarre and Yangery WSPAs (all in the South West Limestone LMP). Rules for Paaratte and Newlingrook are not yet completed.

\cdot) Action 3.9: Streamlining the approval of section 67 storage construction licences

This action is to provide guidance and clarity for section 67 storage construction licence applicants and assessing authorities. At the time the WRSWS was published, applicants for section 67 works licences had to undertake various investigations and environmental assessments, which were often burdensome. DELWP is currently progressing options for providing improved guidance to RWCs about the assessment required for licence applications and to improve the application process.

) Action 3.14: Balanced approach to managing unallocated water on unregulated rivers

This action is to provide an approach to managing unallocated water on unregulated rivers and streams, which balances the needs of consumptive users and the environment.

The Victorian winter-fill Sustainable Diversion Limits have been updated and are applied when assessing applications for new surface water licences and transfers.

f Action 3.15: Staged release of unallocated water

This action is to provide more water to meet the needs of consumptive users in an environmentallysensitive manner. The staged release of unallocated water has been planned to give consumptive users greater access to the water in a manner informed by a better understanding of the sustainable yield of the relevant water system. Unallocated water is to be released through auctions and tenders, so prices are based on the value of the resource. This occurs through the <u>WaterBid</u> platform, launched in 2015. Auctions have been held for water from the Hopkins and Gellibrand rivers and the Parwan GMA. A tender was used for allocation of some groundwater in the West Wimmera GMA. Further sales processes are planned in 2018–19 for the unincorporated groundwater resources of the Lower Tertiary Aquifer north of Warrnambool.

Chapter 4: Making the best use of the region's groundwater resources

Action 4.4: Facilitating groundwater trading

The action is to facilitate groundwater trading. The WRSWS noted that developing groundwater trading could benefit users and the region by moving water across the system. However, incomplete statutory management plans for WSPAs and the region's many small management areas were also identified as barriers to trading.

To achieve the action, water corporations revised groundwater management unit boundaries, finalised statutory management plans or undeclared WSPAs that were no longer required and developed local management plans.

A 2018 report *Effectiveness of Victoria's Water Markets* identified the main requirements for further development of groundwater markets are the need to set caps, allocation of available water, refinement of management area boundaries and education of licence holders.

Progress on this action will be enhanced with the completion of actions 3.5 and 3.15.

Action 4.5: Developing groundwater trade between South Australia and Victoria

This action is to facilitate groundwater trading opportunities between Victoria and South Australia. Many border areas overlie aquifers that extend into both states. While Victorian legislation already allows for interstate groundwater trade, the ability to trade is constrained by the incompatibility of entitlements between the states, the lack of a combined trading zone with a set permissible consumptive volume and the lack of an interstate agreement on how to account for interstate trade. Barriers to interstate trade are being addressed as a part of a review of the border groundwaters agreement. The Border Groundwaters Agreement Review Committee is considering these issues for interstate trade as a part of a review of the agreement.

Chapter 5: Managing adverse water resource impacts from land use

Action 5.1: Statewide recording of water use by land use changes

This action is to improve understanding about the impact of land use changes on water use and the capability to estimate and report on these interactions.

New technologies (such as satellite imagery and remote-sensing) are improving our understanding of how changes in land use affect water resources, and the importance of this understanding is increasingly recognised.

In 2011–12, the National Water Commission funded the (then) Department of Sustainability and Environment (DSE) to prepare the groundwork to regularly estimate and report on water use by land use. This work included estimates of evapotranspiration, which is a key water use in vegetated landscapes. DSE contracted consultants to provide the tools and guidance to make evapotranspiration estimates, and they are now made annually using Victorian Land Use Information System land use data. However, water use estimates are only reported at a whole-of-basin scale, and they are not broken down by land use category or land use change. DELWP is now working to report water use by basin and land use category in future Victorian Water Accounts.

Chapter 7: The Otways



This action is to revise the caps on the amount of unallocated surface water available for winter-fill diversions. About 3.5 GL of unallocated water in the Otway catchments is available for winter-fill diversion under the existing sustainable diversion limit. This water has not been allocated in the Otway catchment because there has been insufficient demand. The **PCV Surface Water Order 2010** will be updated to reflect these changes. The amount of water available for new entitlements in the Otways catchments is to be reviewed as part of the WRSWS review process.

\mathbf{P}) Action 7.3: Improving environmental flows in the Gellibrand River

This action is working towards improving environmental flows in the Gellibrand River. Wannon Water, DELWP and the Corangamite CMA are implementing the action through the Gellibrand Summer Flows Improvement Project. The results of several completed investigations are available on Wannon Water's website, and investigations into improving flows in the river are continuing. The Gellibrand River has high environmental values, and it is a major source of water for urban communities and agriculture. Low flows in summer, particularly in dry years, put the river's ecological values at risk.

Since the WRSWS was developed, there has been increased community concern about acid sulfate soils. A groundwater substitution option at the South Otway Pump site has been shown as unlikely to be viable, given the risk of its environmental impact and the yield and quality of the groundwater.

Wannon Water, in partnership with Corangamite CMA, has updated its cost estimates for all the augmentation options using information it gained when investigating the groundwater substitution option and revisiting its options analysis. Other augmentation options were also investigated (such as building an off-stream, winter-fill storage or extracting groundwater from the Curdievale borefield). The report will be publicly available soon.

Wannon Water has established a stakeholder reference group to provide an opportunity for the community to contribute and so improve the project's outcomes.

Chapter 8: The South-west Coast

Action 8.1: Revised caps on the amount of unallocated surface water available for winterfill diversions in the South-west Coast

This action is to revise the caps on the amount of unallocated surface water available for winter-fill diversions. About 5 GL of unallocated water in the south-west catchments has been made available for winter-fill diversion. This water has been allocated but the <u>PCV Surface Water Order 2010</u> will be updated to reflect these changes. The amount of water available for new entitlements in the South-west Coast is to be reviewed as part of the WRSWS review process.

f Action 8.3: Preserving cultural values of Lake Condah

This action is working towards preserving the cultural values of Lake Condah. Lake Condah is an important cultural site for the Gunditjmara people and restoring the lake has been a goal since 2002. In 2010, a weir was built to improve flows to the lake and counteract historical draining. This action formalises water-sharing arrangements between Lake Condah and other water users. The local management plan does not specify the relationship between the Lake Condah restoration project and other water users: the restoration plan relies on using and protecting winter flows, whereas annual licence holders in the system most likely access summer flows due to the storage requirement for winter flows.

Chapter 9: The Western District

$_{f})$ Action 9.2: Restoring Lake Corangamite

Lake Corangamite is the largest permanent lake in Australia and was listed under the Ramsar Convention in 1982. In the 1950s, the Woady Yaloak Diversion scheme was built to transfer water from the lake to the Barwon River to alleviate flooding on adjacent freehold land. The scheme reduced flooding issues as intended but it also led to more-frequent low water levels in the lake and increased the lake's salinity, particularly during the Millennium Drought. To date, the Cundare Barrage outlet has been enlarged and lowered, and the drainage scheme assets have been maintained at a low operational level. Community concern about increased flood risk has slowed the process for amending the operating rules. Lake Corangamite is unlikely to be fully restored to its pre-1950s condition, but the action will continue to improve its condition.

In 2022 Corangamite CMA plans to review the operation and continuation of the Woady Yaloak Diversion Scheme, after analysing the environmental impact of the system's operation and predicted and observed climate patterns.

Promoting sustainable water use

Actions to promote sustainable use of the region's water resources have largely been successful. Many were broad, planning actions (such as promoting water conservation and extending the reticulated supply network) that were first in the Central Region SWS and then included in the WRSWS and Gippsland Region SWS. Also, action 7.2 resulted in urban water corporations revising their water supply demand strategies as urban water strategies in 2016–17.

Lessons from the Millennium Drought have also been incorporated. Action **3.7** is improving information-sharing about climate variability and risks, and action **3.13** is encouraging fit-forpurpose use of alternative water supplies. Stakeholders listed improvements in the awareness and knowledge of water issues among regional communities as an important success of the WRSWS.

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Revegetation & fencing Image: DELWP



There are 27 WRSWS actions that have been achieved and are by their nature ongoing. That means that while the strategy's requirements have been met, the achievement requires ongoing effort to ensure the intended outcome of it continues to be maintained.

Chapter 3: Promoting sustainable water management

Action 3.4: Monitoring and tracking water use outside the entitlement framework

This ongoing action contributes to improving knowledge about unaccounted water use which will help to improve management of water use outside the entitlement framework. National Water Commission funding initiated the action. Although the NWC has been dismantled, the Victorian Water Accounts include estimates of water use by small catchment dams. Further, all domestic and stock bores require a construction licence and estimated use volumes are reported in the water accounts. *WfV* action 8.4 commits to recording and reporting on all emerging significant uses of water.

Action 3.7: Improving information-sharing about climate variability and risks

This ongoing action contributes to improving information-sharing about climate variability and risks. Research reports by the South Eastern Australian Climate Initiative (SEACI) is available on its **website**. In 2013, DELWP, the Bureau of Meteorology and the CSIRO launched the Victorian Climate Initiative (VicCI); and its research, which covers climate change's past impacts and projections for Victoria, is available on its **website**. In 2017, the Victorian Water and Climate Initiative was launched, which will look at past, current and future climate research. Communicating research results to the water sector is an important function of the initiative.

Action 3.8: Promoting water conservation and efficiency

This ongoing action promotes proactive demand management by supporting water corporations to continue to pursue water conservation and efficiency measures at various levels. The Millennium Drought highlighted the importance of water conservation, water use efficiency and robust planning of water supply and demand. Many initiatives and processes have since been developed, either along with or as a result of the WRSWS, and the Victorian Government continues to support them. They include voluntary water efficiency programs across Victoria, sustainable irrigation programs and irrigation development rules at the CMA level, and water supply and demand planning for urban water corporations. Sufficient progress on implementing the intent of this action has resulted in it being assessed as achieved. To ensure the intent of the action is retained, there are some components that are still ongoing (such as the development of reasonable domestic and stock use guidelines).

Action 3.11: Extending the reticulated supply network

This ongoing action contributes to cost-effectively increasing water reliability and reducing the risks to water reliability by dry conditions. Expanding the reticulated water supply network is a cost-effective way to improve water reliability for communities close to existing supply networks that do not yet have access to those networks. Several extensions to reticulated networks have been proposed or approved (such as the South West Loddon Rural Water Supply Project, which is planned for completion by mid-2019, and the East Grampians Water Supply Project, which has been partially funded and is currently in the planning and approval stages).



Action 3.18: Facilitating integrated water planning

This ongoing action encourages adaptive, innovative and productive water management as well as the use of alternative water sources (such as stormwater, desalinated water and recycled water). Integrating land use and water planning can improve the cost-effectiveness and adaptiveness of water resource management. Water supply demand strategy guidelines issued in 2011 require water corporations to work with local governments to integrate their planning, and the provision of water services is included in regional growth plans. Integrated water management forums are currently considering ways to improve the cost-effectiveness and integrated water management in their regions. Integrated water management forums have been established across the region including for the Great South Coast, Barwon and Central Highlands.

Action 3.19: Promoting sustainable water management on dryland farms

This **ongoing** action contributes to promoting additional online resources for dryland farmers to manage water sustainably and mitigate climate risks. Historically, there has been less guidance for dryland farmers then for irrigators about efficient and sustainable water use. Since 2015, Agriculture Victoria has published guidance for farmers and will continue to do so.

Action 3.20: Using consumptive water en route

This ongoing action contributes to creating benefits for consumptive users, the environment and local communities through innovative water system planning. Releases of water for consumptive use can be timed to also provide benefits for the environment, so long as timing alterations do not disadvantage consumptive users. In future, the social benefits derived from using water en route could also be considered. The VEWH annual seasonal watering plan addresses the use of consumptive water en route to provide environmental benefits. For example, delivery of the Glenelg River compensation flow —an entitlement held by GWMWater to provide for stock and domestic use downstream of Rocklands Reservoir — improves environmental outcomes. This is further supported by the increasing focus on recreational values (achieving shared benefits) as outlined in Chapter 6 of *WfV*.

$_{ m b}$) Action 3.21: Managing riparian land

Stock grazing and invasive weeds pose a continuous risk to riverine and riparian ecosystems. This ongoing action helps to protect waterway health and water quality by ensuring that riparian land is managed appropriately through activities such as fencing, revegetation, weed management and vegetation enhancement.

Managing riparian land is a priority for CMAs, and specific management goals and targets in each region are set out in the regional waterway management strategies. To accelerate the implementation of riparian works, the state government launched the *Regional Riparian Action Plan* in 2015.

The action has ensured continued Environmental Contribution funding for works on a large scale to ensure there is ongoing provision of cost-effective, off-stream, stock watering infrastructure. In the Glenelg Hopkins CMA catchment for example, the Merri River restoration project is currently underway and has removed 3.8 km of woody weeds and planted more than 12,500 native trees, shrubs and grasses.

Action 3.22: Changing environmental management objectives

This ongoing action promotes adaptive management by ensuring that a process is in place to alter environmental objectives in response to long-term changes in water availability. Climate change will most likely make Victoria drier, and adapting to the changed conditions will probably need severe actions. The 2013 *Victorian Waterway Management Strategy* includes a framework for assessing and changing management objectives in regional waterway strategies, which CMAs develop, and which will inform the 15-year long-term water resource assessment due in 2019.

Action 3.23: Considering water impacts when undertaking planned burning and other bushfire control measures

This ongoing action contributes to greater recognition, knowledge and consideration of the impact that bushfire management actions have on water quality and quantity. Bushfires can reduce water quality: for example, major bushfires in the Grampians during the Millennium Drought greatly increased sedimentation in Bellfield Reservoir. Since the WRSWS, some strategic bushfire plans have considered water quality. The Integrated Forest Ecosystem Research Program also continues to study bushfire impacts on forested catchments including on water quality and quantity. When prioritising planned burns, planners consider wildfire risks to water quality and quantity and how planned burns can reduce this risk.

Action 3.24: Developing capacity for Aboriginal involvement in water management

This ongoing action provides the opportunity for increased Aboriginal involvement in water management through activities that support capacity building and participation. Traditional Owners have managed the state's water resources for millennia but in post-settlement times lack of resources and expertise has disadvantaged their capacity to do so. The WRSWS details capacity building programs for young Aboriginal leaders through universities, water corporations, CMAs and DELWP. These programs occurred as planned. Traditional Owner groups and Aboriginal Victorians still need to be involved in the management of water resources, beyond their involvement in consultation processes, through partnerships and employment. Chapter 6 of *WfV* also addresses this issue.

Chapter 4: Making the best use of the region's groundwater resources

Action 4.2: Managing short-term variability in groundwater systems

This ongoing action set clear rules for water-sharing and improves the management of short-term variability in groundwater systems. Having a documented process to manage short-term variability in groundwater resources provides water users with certainty. For new management plans, or where plans have been updated, restriction rules (including for seasonal restrictions) are now documented as required.

) Action 4.6: Strategic groundwater resource assessments

This ongoing action contributes to improving knowledge about groundwater resources and identifies opportunities for further water to be made available with consideration of other users and the environment. To improve water supply for consumptive users, the WRSWS suggests that additional allocations of water from some groundwater systems may be possible. Groundwater resource assessments have been completed for the Dilwyn aquifer and the South West Limestone GMA in support of revised management plans.

Action 4.8: Auctioning water where groundwater systems have additional capacity

This ongoing action contributes to increased availability of water for consumptive users while ensuring the sustainability of groundwater systems. A tender has been held to allocate groundwater in the West Wimmera. Further sales processes are planned in 2018–19 for the unincorporated groundwater resources of the Lower Tertiary Aquifer north of Warrnambool.

Action 4.10: Establishing secure, ongoing funding for future maintenance and renewal of the monitoring network

This ongoing action helps to ensure funding for maintaining and renewing Victoria's monitoring network. A formal process was needed to determine an operating and maintenance program that shares costs on a beneficiary-pays basis. The forward works program is now submitted for consideration under routine budgetary processes. Costs are shared between DELWP (funded through the Environment Contribution Levy) and water corporations (funded through fees and charges approved through the Essential Services Commission's pricing determination processes).

For groundwater, monitoring costs are covered by a partnership of water corporations, CMAs and DELWP. For surface water monitoring, costs are covered by a partnership of water corporations, CMAs, local governments, the Bureau of Meteorology, the Murray-Darling Basin Authority and DELWP.

Action 4.12: Emerging technologies

This ongoing action assists in protecting the region's groundwater resources. New technologies and industries that affect water resources and water users include geothermal energy and <u>carbon capture and</u> <u>storage</u>. DELWP and DEDJTR have studied the impacts of emerging technologies and industries through small-scale trials, and there have also been regional studies about coal seam gas and shale gas.

Chapter 5: Managing adverse water resource impacts from land use

Action 5.7: Reviewing implications of the Murray-Darling Basin Plan for managing the water impacts of land use change

This ongoing action ensures alignment between the Victorian policy approach to managing the water impacts of land use changes and *Murray-Darling Basin Plan* requirements. As the comment on action **5.5** explains, the WRSWS requires the cumulative impacts of land use changes on water resources to be considered in water use decisions. The basin plan also requires these impacts to be considered through the Basin Plan's water resource plans, and they have been incorporated into the *Wimmera-Mallee Water Resource Plan*. Amendments to the Act to implement this WRSWS action were proposed in the Water Bill 2014, but the Bill did not proceed through parliament. Subsequently, the approach in the basin plan was incorporated into the *Wimmera-Mallee Water Resource Plan* through the Wimmera-Mallee risk assessment.

Chapter 6: The Wimmera Mallee Pipeline & Wimmera-Glenelg system

Action 6.2: Collaborating to improve efficiency

This ongoing action contributes to collaboration for managing and operating the supply system. A review of bulk entitlements operations in 2014, to which all stakeholders contributed, recommended periodic reviews with the next due to commence in 2019. The ongoing review requirement includes the participation of all stakeholders.

Action 6.3: Sale of the growth water

This ongoing action contributes to the direction and process for making growth water available for sale to new and existing water users. This action provides for GWMWater to sell growth water — 20 GL water savings from the Wimmera Mallee Pipeline which is included in GWMWater's entitlement and which is identified for regional development and farm diversification — to recover some of the cost of its investment in building the pipeline. GWMWater has sold about half the growth water it held to interested parties. GWMWater reports sales of this water in its annual report. There are ongoing opportunities to sell growth water as a result of pipeline extensions and new pipeline systems (such as the South West Loddon Rural Water Supply Project and the East Grampians Water Supply Project).

Action 6.4: Improving the efficiency of operating the supply system

This ongoing action contributes to improving the transparency and reporting of the operating supply system's efficiency. Although the domestic and stock supply system is now a piped-delivery system, there are still losses in the headworks from evaporation and seepage. GWMWater monitors headworks losses and reports them on the **Storage Manager** website. Operational plans are developed annually and include considerations for managing headworks losses.

) Action 6.7: Sharing any additional water savings in the supply system

This ongoing action contributes to ensuring additional water savings from the supply system are shared equitably. Additional water savings have been managed in line with the WRSWS: they are shared by the organisations that invest in works; the rights of existing entitlement holders are protected; and the effects on third parties are evaluated and addressed. The Wimmera Irrigation District was decommissioned in line with the principles in the WRSWS. The decommissioning resulted in the saving of 23 GL of long-term cap equivalent, which was purchased by the Commonwealth Government. The water entitlement is now held by the Commonwealth Environmental Water Holder.

Action 6.8: Managing the Wimmera-Glenelg environmental entitlement

This ongoing action contributes to establishing a framework for managing the *Wimmera and Glenelg Rivers Environmental Entitlement 2010.*

When the WRSWS was developed, people along the Glenelg River were concerned about the equitable, objective and transparent management of the entitlement. The entitlement was transferred to the VEWH on its creation in 2011 and a consideration of the benefits of separating the entitlements was undertaken during the Bulk Entitlement Operations Review in 2014. It was decided to keep it as a single entitlement, to maintain the flexibility required to achieve the best environmental outcomes. The single environmental entitlement is held and managed by VEWH and its use is prioritised to deliver environmental outcomes.

This fully addresses the intent and specifics of the action described in the SWS.

Chapter 7: The Otways

$_{ m B}$) Action 7.4: Investing in integrated catchment management to improve Otway waterways

This ongoing action helps protect waterway health and water quality by ensuring that the catchment is managed appropriately through activities such as fencing, revegetation, weed management and vegetation enhancement. These complementary works help increase the benefits from delivering water for the environment. CMAs implement integrated catchment management works by implementing their catchment management strategies and regional waterway management strategies. Integrated catchment and waterway management works are funded largely through the Environmental Contribution, and information about achievements is published annually.

Chapter 8: The South-west Coast



This ongoing action helps protect waterway health and water quality by ensuring that the catchment is managed appropriately through activities such as fencing, revegetation, weed management and vegetation enhancement. These complementary works help increase the benefits from delivering water for the environment. CMAs implement integrated catchment management works by implementing their catchment management strategies and regional waterway management strategies. Integrated catchment management works are funded largely through the Environmental Contribution, and information about achievements is published annually in CMAs' annual reports.

Chapter 9: The Western District

Action 9.3: Investing in integrated catchment management to improve Western District waterways

This ongoing action helps to protect waterway health and water quality by ensuring that the catchment is managed appropriately through activities such as fencing, revegetation, weed management and vegetation enhancement. These complementary works help increase the benefits from delivering water for the environment. CMAs implement integrated catchment management works by implementing their catchment management strategies and regional waterway management strategies. Integrated catchment management works are funded largely through the Environmental Contribution, and information about achievements is published annually in CMAs' annual reports.

Chapter 10: The North-west sub-region

Action 10.3: Investing in integrated catchment management to improve waterways

This ongoing action helps to protect waterway health and water quality by ensuring that the catchment is managed appropriately through activities such as fencing, revegetation, weed management and vegetation enhancement. These complementary works help increase the benefits from delivering water for the environment. CMAs implement integrated catchment management works by implementing their catchment management strategies and regional waterway management strategies. Integrated catchment management works are funded largely through the Environmental Contribution, and information about achievements is published annually in CMAs' annual reports.



This ongoing action contributes to protect flows in the Millicent Coast Basin. The Millicent Coast Basin is in the far west of Victoria and extends across the border into South Australia. The basin has low rainfall and unreliable streamflows. As such, there is a heavy reliance on groundwater. When the WRSWS was developed, many people were concerned that plantation forestry in the upper catchment could reduce water resource availability. Consequently, GWMWater and Southern Rural Water applied a moratorium on issuing new surface water entitlements in the basin.

Benefiting waterways, aquifers, wetlands and estuaries

The WRSWS's actions have increased the benefits of water for the environment. The WRSWS did not set large water-recovery targets (unlike the Central Region SWS) but instead built on the water-recovery successes from the Wimmera Mallee Pipeline. The actions for the environment were for adaptive management of water for the environment: action **3.22** implemented processes to adapt environmental objectives to long-term changes in water availability; action **3.20** created benefits for consumptive users and the environment by better using consumptive water en route; and action **3.21** is continuing to support complementary riparian works including fencing, revegetation, weed management and vegetation enhancement. All three actions are ongoing. As well, action **7.3** is improving environmental flows in the Gellibrand River and action **9.2** is restoring Lake Corangamite to improve environmental outcomes for this Ramsar-listed lake.

Improving Wimmera-Glenelg system operations

All the actions in 'Chapter 6: The Wimmera Mallee Pipeline & Wimmera-Glenelg system' have been achieved and either completed or ongoing.

Actions **6.1** and **6.2** were about improving the operational efficiency of the Wimmera-Glenelg system through collaboration, which was transformed by the building of the Wimmera Mallee Pipeline (before the WRSWS was developed). In addition to these actions, the Bulk and Environmental Entitlement Operations Review was undertaken in 2014. The review's recommendations resulted in more transparency of monitoring and reporting of headworks losses (action **6.5**) and the refinement of storage management rules for Lake Lonsdale and Lake Toolondo (action **6.6**).

The WRSWS helped to improve collaboration between stakeholders and to refine water-

sharing arrangements in the system, resulting in benefits for the environment and recreational users. Through policy 6.3, principles were developed for managing the diversion of river flows for recreation in the Wimmera-Mallee in wet years.

Action **6.9** contributed to developing rules for diverting river flows for recreation in wet years, recognising recreational users and including their values in the system's storage management rules. Action **6.8** helped establish and is implementing the framework for managing the *Wimmera and Glenelg Rivers Environmental Entitlement 2010.*

Action **6.3** contributes to the direction and process for GWMWater to sell growth water water savings from the Wimmera Mallee Pipeline — to recover some of the cost of its investment in building the pipeline.

Glenelg River, Lower Glenelg National Park Image: Maggie Bardis



There are 19 WRSWS actions that have been achieved and are completed in full. Several of these actions were achieved through water corporations' urban water strategies and through CMAs' regional waterway strategies.

Chapter 3: Promoting sustainable water management

Action 3.6: Reviewing the process for declaring water supply protection areas and developing statutory management plans

Achieved: 2012–13

This action was to review the process and establish opportunities for streamlining surface water and groundwater management plans to provide more efficient water management. When the WRSWS was published, statutory management plans were administratively costly and could take more than two years to develop. In the meantime, local management plans have been the main way groundwater and unregulated surface water is managed. After a review of WSPA processes, amendments to the Water Act were proposed in the Water Bill 2014, but the Bill did not proceed through parliament. In line with *WfV* action 8.9, DELWP intends to streamline the process and will propose amendments to the Act at the next opportunity.

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Action: 3.16: Updating water supply-demand strategies

Achieved: 2011-12

This action contributed to effective and comprehensive water supply and demand planning to ensure the reliability of supply for urban and industrial users. The WRSWS articulates requirements to ensure urban water corporations' water supply demand strategies follow planning best practices. These requirements, which DELWP set out in WSDS guidelines, include exploring alternative water sources, making agreements about service levels that meet community expectations and completing annual water supply outlooks. Urban water corporations have developed water supply demand strategies for their regions, consistent with DELWP's 2011 WSDS guidelines.

Urban water corporations continue to undertake strategic supply and demand planning. They revised their water supply-demand strategies as urban water strategies in 2017, as required by *WfV*.



Achieved: 2011

This action contributed to a better understanding of and more consistent guidance about Victorian water restrictions during drought and water scarcity. The Millennium Drought saw widespread water restrictions which had major consequences for Victorians. A review to better manage those impacts in the future was completed in 2011. The review's main recommendations — simple permanent water savings rules, a revised set of four-stage water restrictions and a model water restriction by-law — have been implemented.

Chapter 4: Making the best use of the region's groundwater resources

) Action 4.1: Revising groundwater management units

Achieved: 2012

The action was completed through DELWP's Secure Allocations, Future Entitlements project. The groundwater catchments that were introduced after the project reflected connected groundwater resources and flow systems. All groundwater resources are within a groundwater catchment, allowing for amalgamation of management areas (for example, West Wimmera GMA and South West Limestone GMA) and for management to be documented for all groundwater resources. As knowledge improves, there will be further changes to management areas to reduce administration and costs and to support market development.

) Action 4.3: Undeclaring water supply protection areas

Achieved: 2011-12

The action was to undeclare water supply protection areas (WSPAs) without approved statutory management plans. Local management plans were prepared before a WSPA was undeclared. In some cases, when statutory management plans were reviewed, the WSPA was undeclared and the plan revoked because the risk to the resource did not justify continued management under a statutory management plan.

Action 4.7: Groundwater/ surface water interactions

Achieved: May 2017

This action contributed to ensuring that groundwater-dependent ecosystems and existing surface water users were protected from the impacts of increased groundwater extractions through the identification of areas of high groundwater/surface water interaction. Before the WRSWS, the impact of groundwater use on surface water was considered in the development of groundwater management plans and licence assessment, although approaches were inconsistent. Local management plans and statutory management plans now identify and manage significant groundwater / surface water interactions, to ensure groundwater use does not reduce the reliability of water for surface water users or for the environment. **Resource-sharing guidance** informs considerations about groundwater / and surface water interactions and supports planning. Guidelines for groundwater licensing to protect high-value groundwater-dependent ecosystems have also been developed to manage the impact on these ecosystems.

Action 4.9: Upgrading and refining the monitoring network

Achieved: 2013-14

This action contributed to a revised and improved groundwater monitoring network. Groundwater in Victoria is monitored mainly through the State Observation Bore Network (SOBN). When the WRSWS was published, groundwater monitoring infrastructure was inadequate in some areas. Who would fund the SOBN was also unclear, which put at risk the long-term maintenance and operation of the network. The SOBN was restructured soon after the WRSWS was published. The restructured SOBN is now a regional monitoring network with a clearly defined purpose for each site. The ageing monitoring infrastructure has been upgraded through a program of bore refurbishment works. Key stakeholders have been identified for each monitoring site, and the approach to future cost-sharing is to be negotiated. Annual expenditure on maintaining and developing the SOBN is currently being reported.

Action 4.11: Develop Ministerial guidelines for groundwater dependent ecosystems

Achieved: April 2015

This action contributed to improved knowledge about groundwater-dependent ecosystems and facilitated the integrated management of these systems. The WRSWS acknowledged there was insufficient understanding of groundwater-dependent ecosystems when it was published, so it recommended a risk-based approach to manage impacts on GDEs. Groundwater licensing guidelines to protect high-value impacts on GDEs were released in 2015 and outline the approach licensing authorities should take to consider risks.

Chapter 5: Managing adverse water resource impacts from land use

Action 5.2: Reviewing models and recommending methods for improving estimates of whole-of-catchment water use

Achieved: March 2012

This action contributed to the methods for estimating whole-of-catchment water use through a review of the models for estimating evapotranspiration. New methods for estimating evapotranspiration were emerging around the time the WRSWS was developed. In 2012, the National Water Commission completed its Accounting for all significant water uses project. The project compared and evaluated methods for estimating evapotranspiration. Findings from the project were used as part of the framework for improving estimates of evapotranspiration (see comments for action **5.1**).

Chapter 6: The Wimmera Mallee Pipeline & Wimmera-Glenelg system

) Action 6.1: Reviewing operation of the bulk entitlements

Achieved: March 2014

This action assessed how well the operation of the Wimmera Mallee Pipeline system met its storage management objectives and provided an opportunity to refine management of the system. A review of bulk entitlements in 2014, to which all stakeholders contributed, found the headworks system had largely been managed in line with the objectives of the *Storage Management Rules for the Wimmera-Mallee System Headworks* set in 2010. The review made several recommendations to improve the efficiency of the system.

) Action 6.5: Considering more efficient headworks management

Achieved: 2014

This action considered options for more efficiently managing the headworks. The action considered options for managing storages that do not contribute to efficient water capture, storage and delivery. In exploring storage options, the potential benefits to system operations and entitlement holders and implications for other users (such as recreational users) were investigated. Changes were subsequently made to storage management rules.

Action 6.6: Efficient operation of lakes Lonsdale and Toolondo

Achieved: September 2014

This action helped to ensure the efficient operation of Lake Lonsdale and Lake Toolondo through the development of storage management rules. These lakes have the potential for efficient storage management, as they can store water in wet years for use in later years. They also have high evaporation losses. Storage management rules for the two lakes were developed with stakeholders, were refined in the bulk entitlement review and are available on the **Storage Manager** website.

) Action 6.9: Developing rules for diverting river flows for recreation in wet years

Achieved: March 2014

This action helped to allow for water to be managed to enhance recreational benefits in wet years. The storage management rules were revised in line with the principles of WRSWS policy 6.3.

Chapter 7: The Otways

\sim) Action 7.2: Revising urban water supply-demand strategies

Achieved: 2012, 2017

This action contributed to effective and comprehensive water supply and demand planning to ensure the reliability of supply for urban and industrial users. Barwon Water and Wannon Water developed water supply-demand strategies in 2012. *WfV* now requires Victoria's urban water corporations to develop urban water strategies, which provide detailed, 50-year forecasts of demand, and supply options. Urban water strategies are to be based on the government's climate guidelines, which set out essential data and advice about how to assess the impact of climate change on water supplies. The water corporations revised their water supply-demand strategies as urban water strategies in 2017.

Chapter 8: The South-west Coast

ho) Action 8.2: Revising urban water supply-demand strategies

Achieved: 2012, 2017

This action contributed to effective and comprehensive water supply and demand planning to ensure the reliability of supply for urban and industrial users. Wannon Water developed a water supply-demand strategy in 2012. Action 7.2 above explains *WfV*'s current requirements for urban water strategies, and Wannon Water revised its water supply-demand strategy as an urban water strategy in 2017.

) Action 8.4: Improved environmental flows for the Merri River

Achieved: October 2016

This action contributed to formalising the diversion rules for the Merri River through a local management plan to improve environmental flows. Since 1998–99, flows in the Merri River have been managed through a draft streamflow management plan. The plan recognised the need for additional environmental flows, and restrictions and bans on water extraction were implemented. A local management plan for the Merri River has also been developed. It includes maintaining a minimum summer flow, a trigger flow for bans on summer diversions and a trigger for bans on winter diversions. The new plan will provide greater flexibility for upstream water users and provide environmental benefits.

Chapter 9: The Western District

$\langle \rangle$) Action 9.1: Revising urban water supply-demand strategies

Achieved: 2011, 2012, 2017

This action contributed to effective and comprehensive water supply and demand planning to ensure the reliability of supply for urban and industrial users. Wannon Water, Barwon Water, Central Highlands Water and GWMWater developed water supply-demand strategies in 2011 and 2012. Action **7.2** explains *WfV*'s current requirements for urban water strategies, and the water corporations revised their water supply-demand strategies in 2017.

Chapter 10: The North-west sub-region

Action 10.1: Revising urban water supply-demand strategies

Achieved: 2011, 2012, 2017

This action contributed to effective and comprehensive water supply and demand planning to ensure the reliability of supply for urban and industrial users. Coliban Water, Central Highlands Water and GWMWater developed water supply-demand strategies in 2011 and 2012. Action **7.2** explains *WfV*'s current requirements for urban water strategies, and the water corporations revised their water supply-demand strategies in 2017.

Action 10.2: Management of the Upper Wimmera River

Achieved: March 2018

This action contributed to protecting the streamflows in the Upper Wimmera River by formalising current rules and setting caps on water use. The environmental values of the unregulated upper Wimmera River were stressed throughout the Millennium Drought, mainly due to flow stress from domestic and stock farm dams. A management plan for the Wimmera River that protects streamflows by formalising water-sharing rules was approved in March 2018.

Improving the approach to groundwater management

The WRSWS has improved the flexibility and accountability of groundwater management and cross-aquifer integration in the region. The actions clarified management arrangements, increasing certainty for water users and managers, largely by:

- revising groundwater management units (action **4.1**)
- undeclaring WSPAs and providing flexibility through local management plans (action **4.3**)
- considering the environment and groundwater-dependent ecosystems in decision-making (actions **4.7** and **4.11**).

The WRSWS prompted changes in the water allocation framework that better considered impacts on groundwater-dependent ecosystems. Before the strategy, there was little-to-no integrated management of groundwater-dependent ecosystems, that considered linkages between aquifers. Also, the WRSWS was a catalyst for a range of improvements in Victoria's groundwater management. Additional groundwater resource assessments have been completed in the Wimmera and Mallee areas. Many WSPAs and GMAs in the West Wimmera were brought together in the *West Wimmera Groundwater Management Strategy*, which has management rules for resource use and for trade. Where additional water is available, it has been made available for uptake by users.

In the south-west, SMPs have been steadily updated, and WSPAs have been revoked where further evaluation of the resource indicated a SMP was not needed and a LMP could be used. As with the West Wimmera, some smaller GMAs were incorporated into larger management areas, increasing opportunities for trade.

However, the trading market remains undeveloped and there is still more work to be done.



State observation bore Image: DELWP

3. Feedback about strategy development and implementation



As the introduction to this report explained, the five-yearly assessment emphasised consultation with stakeholders involved in developing and implementing the WRSWS. The information about the status of strategy actions draws heavily on what stakeholders told us about how actions have been achieved and what is in place or planned to be done to achieve outstanding actions. Stakeholders also provided other feedback about strategy, which is explained below.

Strategy development

Stakeholders said the WRSWS provided a holistic overview of the factors they needed to consider, to create a sustainable water future. They said the WRSWS addressed the needs of all users, creating opportunities for informed, cross-organisational discussions. The process of developing the WRSWS ensured they considered the whole picture of water security and resources planning, rather than just managing systems in isolation from one another. This holistic, integrated planning approach had improved understanding of the complexity and meaning of water security.

Some stakeholders were concerned about how adequately the WRSWS prepared the region for climate change and population growth. It is difficult to make accurate projections of population growth and climate change effects over long time frames, limiting the accuracy and usefulness of long-term plans. This could result in chronic, ongoing water shortages in the future where the need for trade-offs between different types of water users and new augmentations (such as using recycled water in inland areas) may not have been fully considered.

The WRSWS increased recognition of the environment as a legitimate water user. Traditionally, the environment's share of water was considered to be the water remaining in the system after consumptive needs had been met. In the early 2000s, specific entitlements for the environment were established. The SWSs built on this foundation to put greater emphasis on environmental considerations in decision-making, improve knowledge about environmental values (such as about groundwater-dependent ecosystems) and generally to recognise the environment as a legitimate water user and to promote more environmentally conscious mindsets. Consequently, environmental water managers engaged with other stakeholders more as equal partners.

The process of developing and implementing the WRSWS created strong relationships between stakeholders. The development process was the first time many stakeholders had engaged with each other, and it enabled stakeholders to hear and understand the needs and issues of other water users. Many of the relationships built while developing the WRSWS have been maintained and have helped improve the way organisations now manage water resources.

Stakeholders see the broader community's increased awareness of water issues as a lasting outcome of the WRSWS, the development of which included extensive community engagement. There is now greater community understanding of water uses and needs, water resources planning issues and the water entitlement framework.

Stakeholders praised the process to develop the WRSWS as collaborative and well-communicated, and attribute many of the WRSWS's achievements to the quality of the process. However, they also said not all discussions during the development of the WRSWS were recorded. Many options had been debated, but sometimes only the preferred options and actions were recorded in the WRSWS. Some stakeholders said that a record of all the options considered and the rationale for not pursuing some of them would be of great value if assumptions change: it would enable adaptive pathways planning.

Strategy implementation

Many stakeholders said the process for implementing the WRSWS has been lesscollaborative than the process to develop it. They said there was no implementation plan for the actions, and no clear, articulated governance arrangements for their delivery: both would have helped the process. They also said the lack of an evaluation framework to implement the WRSWS was an oversight. Nevertheless, stakeholders said the shortcomings did not impede completion of the actions because the responsible parties had committed to them.

Stakeholders considered the timeframes for implementing the WRSWS to be ambitious: the strategy indicated most of the actions were to be taken within two years. They said the limited resources of their organisations had made the timeframes unrealistic, although they acknowledged DELWP had understood the challenge and had helped where possible. Stakeholders said the strategy's actions should perhaps have been prioritised, to inform decisions about how best to allocate resources to implementation. Also, it was difficult to differentiate between short- and longterm actions, small- and large-scale actions and foundational- and non-foundational actions. They said not all actions were of equal importance, scale or priority. They suggested in future there be an implementation plan with timeframes that identifies interdependencies between actions, and that identifying responsibilities for resourcing actions might also help to set realistic timeframes.

The realities of long-term planning are that:

- it might not be feasible to develop objectives and outcomes that remain relevant over the medium and longer planning horizon
- it can be difficult to identify actions that need to be implemented over a medium and longer period
- it can also be difficult to commit to actions so far into the future, given the uncertain and changing environment.



Painkalac Creek Estuary Image: Corangamite CMA

4. Next steps

Lake Corangamite Image: Alison Pouliot

The next steps for the WRSWS are to implement this assessment report's recommendations, and to undertake the WRSWS review.

The report's recommendations aim to:

- strengthen the current requirements for monitoring and reporting on the implementation of the strategy, and for reviewing it
- have DELWP coordinate a process involving organisations responsible for implementing WRSWS actions to develop an implementation plan for WRSWS actions.



RECOMMENDATION 1:

that DELWP monitors implementation of WRSWS actions, and publishes annually a summary of the status of implementation for inclusion in its annual report.

The Water Act 1989 requires reporting about any current SWS and draft strategy, including measures being taken to implement the SWS and the priorities that apply to actions.

Ongoing monitoring and reporting about implementation of the SWS's actions helps

stakeholders understand barriers to progressing some actions, and it provides an opportunity to highlight measures being taken by the organisations responsible for implementing the actions. It also helps to build capacity and improve accountability, which adds to the credibility of the SWS.







RECOMMENDATION 2:

that DELWP, in partnership with organisations responsible for implementing WRSWS actions, develops by March 2019 an implementation plan for WRSWS actions. The implementation plan is to support the WRSWS review and should:

- ensure ongoing collaboration across organisations responsible for implementing WRSWS actions
- clarify governance arrangements for implementing the actions and the role of organisations responsible for implementing WRSWS actions
- document progress implementing actions and changes in direction and priorities, including reasons why an action might be no longer relevant
- identify the risks of delaying or not completing the actions

- explore options to ensure that local knowledge is considered
- document priority steps to support implementation of the actions
- inform the annual monitoring information to be provided to DELWP in June of each year.

Feedback from the five-yearly assessment workshops indicated that stakeholders supported the process to develop the SWSs as collaborative and well-communicated. However, they also said the process for implementing the WRSWS has been less-collaborative, as there was no implementation plan for the actions and no clear, articulated governance arrangements.





RECOMMENDATION 3:

that the WRSWS review update the status of actions and assess if further work is needed to achieve actions or their intended outcomes. That, if necessary, the review also propose further effort to achieve actions and consider discontinuing actions that might be no longer relevant.

The Water Act 1989 requires SWS reviews to determine whether or not the timeframes and targets in the SWS were met. A review is supported by a consultative committee and includes at least two months of public consultation. This enables the review to take a rigorous approach to making recommendations, considering lessons learned, challenges and current policy positions.

The WRSWS review will be informed by:

• annual monitoring and reporting, about which this report makes a recommendation

- this five-yearly assessment report, the contribution of which is explained above
- the long-term water resource assessment, which DELWP is currently conducting
- the grid oversight function, a partnership between the Victorian Government, water corporations and key stakeholders to improve Victoria's water grid and how it operates
- implementation of the *Murray-Darling Basin Plan* in Victoria.

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