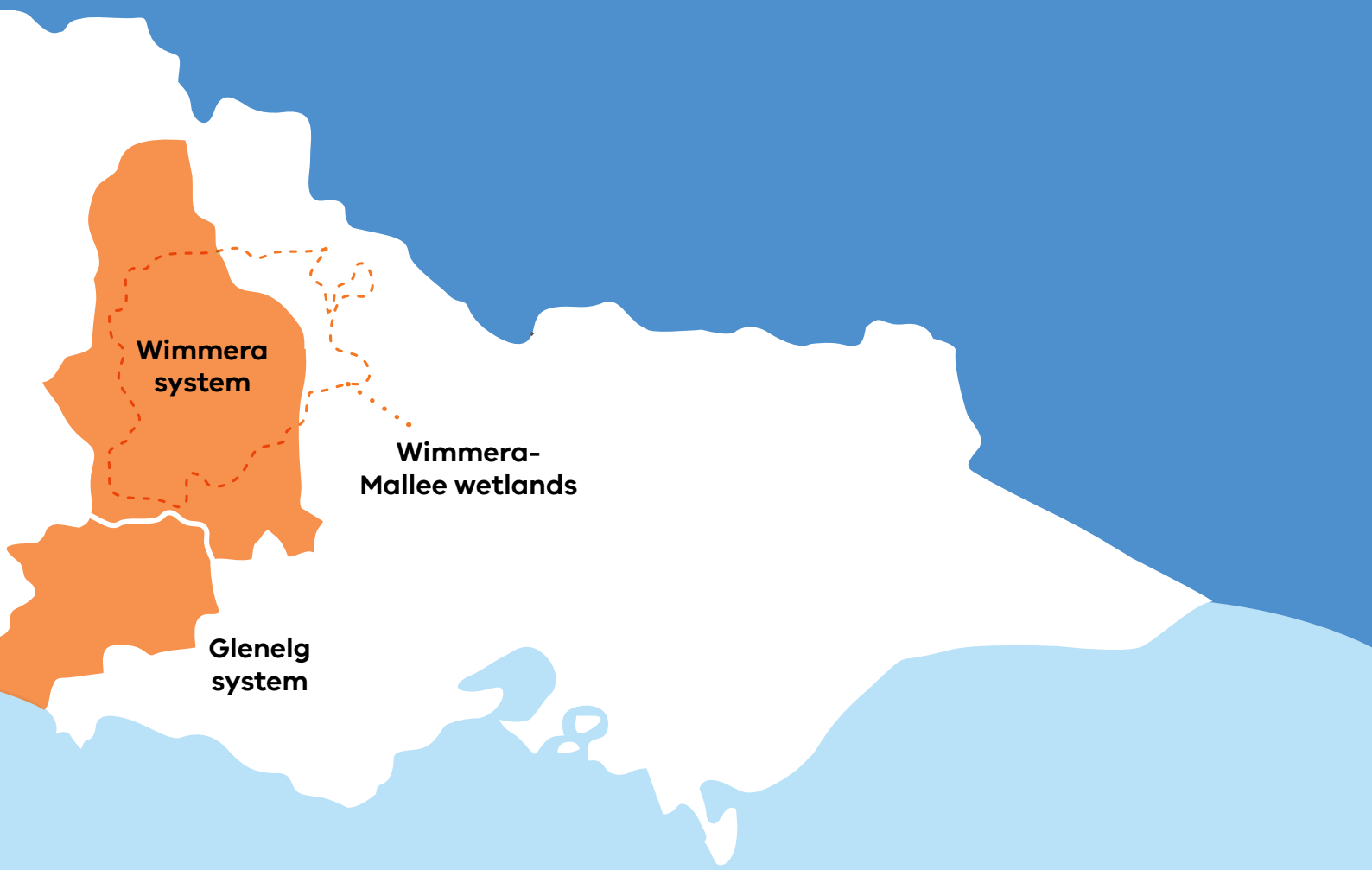
SECTION 4:
Western region



4.1 Western region overview

The systems in the western region that can receive water from the VEWH's environmental entitlements are *Bochara-Bogara-Pawur* (Glenelg River), the Wimmera River system and the Wimmera-Mallee wetlands. The Wimmera River system and Wimmera-Mallee wetlands are part of the Murray-Darling Basin, although *Barringgi Gadyin* (Wimmera River) ends in terminal lakes without directly flowing into the Murray River.

Water for the environment in the western region is supplied from the Wimmera-Mallee System Headworks, which is a series of on-stream reservoirs, off-stream storages and connecting channels that harvest water (mainly near the Grampians) and distribute it to entitlement holders throughout the Wimmera catchment and parts of the Avoca, Loddon, Glenelg and Mallee catchments.

The Wimmera and Glenelg systems share water available under the *Wimmera and Glenelg Rivers Environmental Entitlement 2010*, and the VEWH works with the Wimmera and Glenelg Hopkins CMAs to determine how the available allocation will be used in the river systems each year. Water for the environment available to the Wimmera-Mallee wetlands is provided under the same entitlement, and this water is available for use in the small wetlands supplied by the Wimmera-Mallee Pipeline across the Wimmera, Mallee and North Central CMA areas.

The Commonwealth Environmental Water Holder (CEWH) also holds entitlement in the Wimmera system that can be used to supply the Wimmera River and lower Mount William Creek.

The following system sections present the environmental values, objectives and planned actions for each system in the western region.

Traditional Owners in the western region

Traditional Owners and their Nations in the western region have deep connections to Country that have endured for tens of thousands of years. These include inherent rights and cultural obligations to Country and the community.

The Barengi Gadjin Land Council Aboriginal Corporation (BGLC), Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC) and the Eastern Maar Aboriginal Corporation are the Registered Aboriginal Parties (RAPs) under the Victorian *Aboriginal Heritage Act 2006* for the areas incorporating waterways covered by this section of the seasonal watering plan. They each also hold Native Title, and BGLC has a Recognition and Settlement Agreement with Victoria.

The Burrandies Aboriginal Corporation (based in South Australia) has connections to the western region.

Some sites that make up the Wimmera-Mallee wetlands are on the Country of the Dja Dja Wurrung people (Djaara), and on land of significance to the Barapa Barapa people. The Dja Dja Wurrung Clans Aboriginal Corporation (trading as DJAARA) is a RAP and has a Recognition and Settlement Agreement with the Victorian Government.

Engagement

Program partners engage extensively with Traditional Owners, stakeholders and local communities to understand community priorities for delivering water for the environment in the coming year and to understand how cultural, social, economic and recreational values, uses and objectives may be supported by delivering environmental flows, provided environmental outcomes are not compromised.

Engagement also informs environmental objectives in regional catchment and waterway strategies, environmental flows studies and environmental management plans.

Table 4.1.1 Program partners and stakeholders that engaged with the Glenelg Hopkins CMA to develop seasonal watering proposals and key documents informing the proposals for the Glenelg system (in alphabetical order)

Partner/stakeholder	Glenelg system
Community groups and environment groups	• Friends of the Glenelg River Inc. • Glenelg River User Group
Government agencies	• Department of Energy, Environment and Climate Action • Grampians Wimmera Mallee Water • Limestone Coast Landscape Board • Parks Victoria • Victorian Environmental Water Holder • Victorian Fisheries Authority • Wimmera CMA
Landholders/farmers	• Individual landholders
Local businesses	• Harrow Discovery Centre • Paestan Canoe Hire • Vickery Bros (sand extraction)
Recreational Users	• Casterton Angling Society Inc. • Dartmoor Angling CLUB • Individual anglers • Kayakers • VRFish
Traditional Owners/ Aboriginal corporations	• Barengi Gadjin Land Council • Burrandies Aboriginal Corporation • Gunditj Mirring Traditional Owner Corporation • Winda-Mara Aboriginal Corporation

Table 4.1.2 Program partners and stakeholders that engaged with the Wimmera CMA to develop seasonal watering proposals and key documents informing the proposals for the Wimmera system (in alphabetical order)

Partner/stakeholder	Wimmera system
Community groups and environment groups	• Friends of Bungalally and Burnt Creek Group • Lake Lonsdale Action Group • Yarriambiack Creek Advisory Committee
Government agencies	• Commonwealth Environmental Water Office • Department of Energy, Environment and Climate Action • Glenelg Hopkins CMA • Grampians Wimmera Mallee Water • Hindmarsh Shire Council • Horsham Rural City Council • Murray-Darling Basin Authority • Northern Grampians Shire Council • Parks Victoria • Victorian Fisheries Authority • Victorian Environmental Water Holder • Yarriambiack Shire Council
Landholders/farmers	• Wimmera community members, especially landholders and stock and domestic water users
Recreational users	• Dimboola Boat and Water Ski Club • Dimboola Fishing Classic • Dimboola Rowing Club • Field and Game • Hindmarsh Ski Club • Horsham Fishing Competition Inc. • Horsham Triathlon Committee • Jeparit Anglers Club • Natimuk Field and Gane • Natimuk Lake water ski club • Paddle Victoria • VRFish • Wimmera Anglers Association
Traditional Owners	• Barengi Gadjin Land Council

Table 4.1.3 Program partners and stakeholders that engaged with the Mallee, North Central and Wimmera CMAs to develop seasonal watering proposals and key documents informing the proposals for the Wimmera-Mallee wetlands (in alphabetical order)

Partner/stakeholder	Wimmera-Mallee wetlands
Community groups and environment groups	• Avon Plains Banyena Landcare Group • Birchip Landcare Group • Donald Landcare Group • Mallee CMA Aboriginal Reference Group • Mallee CMA Land and Water Advisory Committee • Wimmera Glenelg Storage Manager Reference Group • Wimmera Mallee Pipeline Wetlands Environmental Water Advisory Group • Wimmera Mallee Wetland Prioritisation Advisory Group
Government agencies	• Buloke Shire Council • Commonwealth Environmental Water Office • Department of Energy, Environment and Climate Action • Grampians Wimmera Mallee Water • Mildura Rural City Council • Parks Victoria • Victorian Environmental Water Holder • Yarriambiack Shire Council
Landholders/farmers	• Private landholders • Wimmera-Mallee Pipeline Environmental Water Advisory Group (North Central CMA)
Recreational users	• Natimuk & District Field & Game Inc. • Recreational users in the local community
Traditional Owners	• Barapa Barapa Nation Aboriginal Corporation • Barengi Gadjin Land Council • Dja Dja Wurrung Clans Aboriginal Corporation

Integrated catchment management

Altered water regimes are one of many threats to the health of Victoria's waterways. Many of the environmental objectives of water for the environment in the western region are complemented by simultaneously addressing issues such as barriers to fish movement, high nutrient loads, loss of streambank vegetation and invasive species.

Examples of complementary programs that support environmental flows outcomes in the western region include:

- fish passage works at Sandford Weir, Dergholm Gauge and Warrock are used in combination with environmental water delivery to facilitate the movement of migratory fish from the estuary to the upstream reaches of the Glenelg and Wannon rivers
- installation of artificial wetland pontoons in the Dimboola weir pool and a regulating structure to reconnect Langlands Anabranch in the Horsham weir pool, as well as walking tracks to manage recreational access along the Wimmera River to reduce bank erosion
- stock-exclusion fencing along priority waterways throughout the Wimmera and Glenelg catchments to support the re-establishment of streamside and in-stream vegetation
- restoration of complex habitat for native fish by installing large wood in reach 2 of the Glenelg River using red gum trunks and root-balls
- control of invasive species and stock-exclusion fencing in the Wimmera-Mallee wetlands.

For more information about integrated catchment management programs in the western region, refer to the Glenelg Hopkins, Mallee, North Central and Wimmera CMA's regional catchment strategies and regional waterway strategies.

Risk management

When developing seasonal watering proposals for the Glenelg, Wimmera and Wimmera-Mallee wetland systems, environmental watering program partners assessed risks associated with assessed risks associated with potential environmental water delivery in 2025-26 and identified appropriate mitigating strategies. Risks and mitigating actions are continually assessed by program partners throughout the year (see **subsection 1.2.7**).

Seasonal overview

Rainfall across the western region in 2024-25 was below average. In the Glenelg system, water for the environment was needed to help maintain a continuous flow from Rocklands Reservoir to the estuary from early November 2024 to June 2025. Total rainfall across the Wimmera system in 2024-25 was also below the long-term average, with only November and December 2024 reaching average monthly volumes. The Wimmera system had few natural events, and inflows to the catchment's storages were very low. Water for the environment was used in the MacKenzie River and Burnt Creek from early August 2024, initially to provide a low flow. However, with drying conditions and water availability from Wartook Reservoir diminishing, the focus in these waterways shifted to maintaining drought refuges. Water was also used to deliver a low flow and freshes in the Wimmera River from early October 2024. Small volumes of environmental water were delivered in upper Mount William Creek during October 2024 to top up refuges.

Water storages across the Wimmera-Mallee System Headworks were collectively at 55 per cent capacity at the start of 2024-25. They rose to about 57 per cent in early October 2024 and dropped to 39 per cent capacity in mid-April 2025. The *Wimmera and Glenelg Rivers Environmental Entitlement 2010* reached 19 per cent allocation in April 2025, but carryover of 57,560 ML provided the bulk of the available water. The CEWH did not receive any new allocation in the Wimmera system, but its carryover from 2023-24 was 16,150 ML. New allocation combined with carryover and accumulated passing flow meant about 84,000 ML of water for the environment was available in 2024-25 across the CEWH's and the VEWH's entitlements.

The Bureau of Meteorology has forecast average rainfall across the western region during winter 2025. At the time of writing, Grampians Wimmera Mallee Water had not issued an allocation outlook for 2025-26. However, given storage levels, the VEWH expects modest allocations in July 2025. The CEWH is not likely to receive any allocation in 2025-26 unless storage inflows are significantly above the long-term average. The VEWH and CEWH will be able to carry over water in the Wimmera and Glenelg rivers environmental entitlement and in the Wimmera-Mallee wetlands to help support environmental watering actions in 2025-26 and subsequent years if dry conditions develop and persist. Carryover requirements are regularly a key consideration in the western region, and they influence the range of environmental watering actions that are authorised and delivered.

The dry conditions experienced in 2024-25 and the summer 2024-25 bushfires in the Grampians and Little Desert national parks are expected to affect watering decisions in 2025-26 as we manage potentially poor water quality and seek to support the recovery of environmental values. This means that the priority of environmental watering actions might be adjusted throughout the year, depending on conditions. Maintaining the condition of native plant and animal communities in rivers and wetlands across the western region and improving their resilience remains a priority in 2025-26. The Glenelg Hopkins and Wimmera CMAs have planned potential environmental watering actions for 2025-26 to continue supporting recent improvements in environmental conditions, but can adapt according to conditions. The VEWH will monitor allocations and forecast climatic conditions during winter and spring and work with the Glenelg Hopkins and Wimmera CMAs to set a carryover target for 2026-27, if necessary.

The Wimmera-Mallee wetland portion of the environmental entitlement is only likely to receive an allocation in 2025-26 if storage inflows are close to or greater than the long-term average. The planned watering actions for the wetlands in 2025-26 are expected to use up to 392 ML of available carryover, which will leave about 193 ML to support watering actions in future years. The current supply for the Wimmera-Mallee wetlands may allow essential watering actions to at least the end of 2026-27 without new allocations.

4.2 Glenelg system

Waterway manager – Glenelg Hopkins Catchment Management Authority

Storage manager – Grampians Wimmera Mallee Water

Environmental water holder – Victorian Environmental Water Holder

System overview

The Glenelg River (*Bochara* in Dhauwurd Wurrung, *Pawur* in Bunganditj and *Bogara* in Wergaia-Jadawadjali languages) rises in *Gariwerd* (the Grampians National Park) and flows west through Harrow and then south to Casterton and Dartmoor (Figure 4.2.1). The Glenelg River estuary flows through South Australia for a short distance before returning to Victoria and flowing into the sea at Nelson. At over 500 km, the Glenelg River is one of the longest rivers in Victoria.

Moora Moora Reservoir and Rocklands Reservoir are Wimmera-Mallee System Headworks water storages in the Glenelg River system that contribute to the supply of water to towns and properties across the Wimmera, Mallee, Glenelg, Loddon and Avoca catchments. Water for the environment is actively managed in the Glenelg River below Rocklands Reservoir. There are passing flow rules for the Glenelg River and the upper Wannon River.

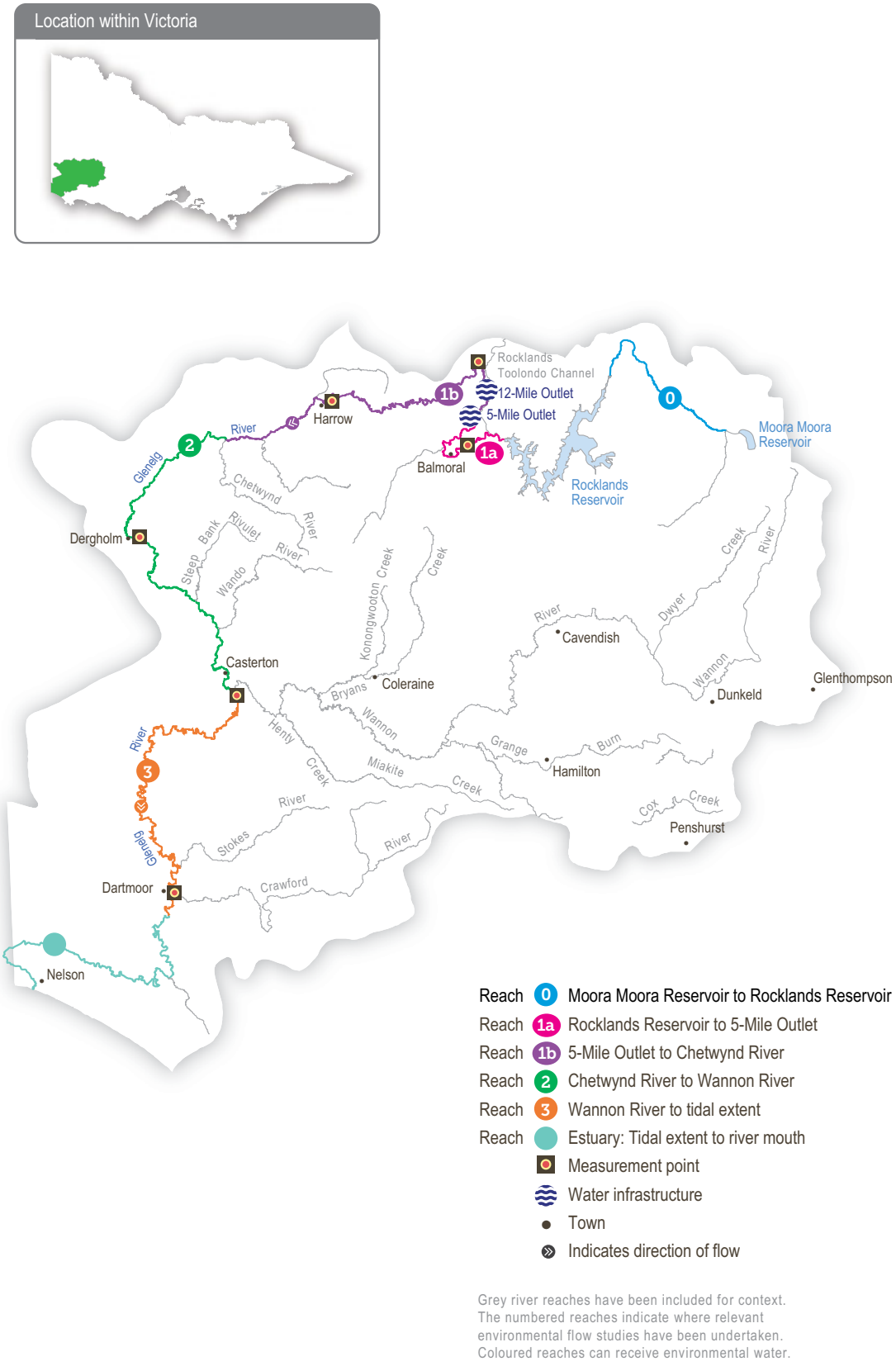
The priority reaches of the Glenelg River for deliveries of water for the environment are:

- Moora Moora Reservoir to Rocklands Reservoir (reach 0)
- Rocklands Reservoir to 5-Mile Outlet (reach 1a)
- 5-Mile Outlet to the confluence with the Chetwynd River (reach 1b)
- Chetwynd River to the Wannon River (reach 2)
- Wannon River to the tidal extent just below the confluence with Crawford River (reach 3).

Water for the environment in the Glenelg system is released from Moora Moora Reservoir for reach 0, Rocklands Reservoir for reach 1a via the reservoir wall outlet and for reaches 1b, 2 and 3 via the 5-Mile and 12-Mile outlets.

The Glenelg River estuary benefits from environmental flows released to upstream reaches, but releases do not currently target the estuary. The Glenelg Hopkins CMA has investigated the importance of water for the environment in the Glenelg River estuary, listed as a heritage river reach and a site of international significance under the Ramsar Convention. Environmental flows provide landscape-scale benefits that support estuarine values.

Figure 4.2.1 Glenelg system



Environmental values

The Glenelg River starts in *Gariwerd* (the Grampians National Park) and flows to the sea through the Lower Glenelg National Park. The lower reaches of the Glenelg River are part of a landscape recognised as one of 15 national biodiversity hotspots, and the Glenelg Estuary and Discovery Bay site was listed under the Ramsar Convention as a site of international significance in February 2018.

The Glenelg River supports a range of rare and unique aquatic life, including the endangered Glenelg freshwater mussel, Glenelg spiny crayfish and a newly described species of river blackfish. It is also home to platypus and populations of native fish, including estuary perch, short-finned eel, tupong and three species of pygmy perch, including the threatened variegated pygmy perch and Yarra pygmy perch. Some of these fish species migrate long distances to and from the Glenelg River estuary to complete their life cycles. Sand extraction currently occurs around the Casterton to Dergholm reaches to provide deep pools, habitats and drought refuge areas, important to fish species and the waterbugs that feed them.

Frasers Swamp is another important feature of the upper Glenelg system and is home to a healthy growling grass frog population. The swamp also meets the habitat requirements for the Australasian bittern, and investigations are underway to see if they use this habitat.

The Glenelg River supports a variety of streamside vegetation communities and species, including the endangered Wimmera bottlebrush. Streamside and floodplain vegetation comprises river red gum woodlands with paperbark, bottlebrush and tea tree understorey.

Environmental objectives in the Glenelg system

	F1 – Protect, maintain, and, where possible, improve endemic fish populations, including threatened and diadromous species
	**G1** – Maintain deep pool habitats and connectivity along the river
	**MI1** – Maintain a wide range and large number of waterbugs to break down organic matter and support the river's food chain
	**PR1** – Maintain the platypus population
	**V1** – Maintain healthy and diverse mosaics of water-dependent vegetation (such as river red gums and Wimmera River bottlebrush) **V2** – Prevent the establishment of terrestrial plans in the stream bed
	WQ1 – Maintain water quality for native fish, waterbugs, other water-dependent animals and aquatic vegetation

Traditional Owner cultural values and uses

The Glenelg River, known as *Bochara* in Dhauwurd Wurrung, *Pawur* in Bunganditj and *Bogara* in Wergaia-Jadawadjali languages, is a significant feature in the cultural landscape of south-west Victoria. The river features in Traditional Owner creation stories. It continues to be an important place for Traditional Owners, who have been custodians of the area for thousands of years, using the rich resources available along the river and the associated habitats.

Traditional Owners across the Glenelg catchment have retained a strong identity and connection to the traditional lands for which they have custodial rights and responsibilities. Cultural values in the Glenelg River system align strongly with environmental values. Cultural values are holistic and interrelated: they are bound up with the health of the river system overall and the Country of which the river is part. Traditional Owners' wellbeing is connected to the health of the river and of Country.

Gunditjmara Traditional Owners have identified that it is a priority to spend time on the river and increase cultural practices and connection to Country. They have highlighted the importance of increasing ceremonial and on-Country gatherings along the river, including at Casterton and the Glenelg Estuary.

The **Glenelg River Yarns website** was launched in late 2021 as part of the Glenelg River Cultural Flows project. The website shares cultural values and stories on a virtual tour and welcomes all visitors to Country.

Increasing the involvement of Traditional Owners in planning and managing environmental flows and progressing opportunities towards self-determination in the environmental watering program is a core commitment of the VEWH and its program partners. This is reinforced by legislation and policy commitments, including the *Water Act 1989*, the ***Victorian Aboriginal Affairs Framework***, the 2016 ***Water for Victoria***, the 2022 ***Water is Life: Traditional Owner Access to Water Roadmap*** and, in some cases, agreements under the *Traditional Owner Settlement Act 2010*.

Figure 4.2.2 Glenelg River Environmental Flow Seasonal Calendar

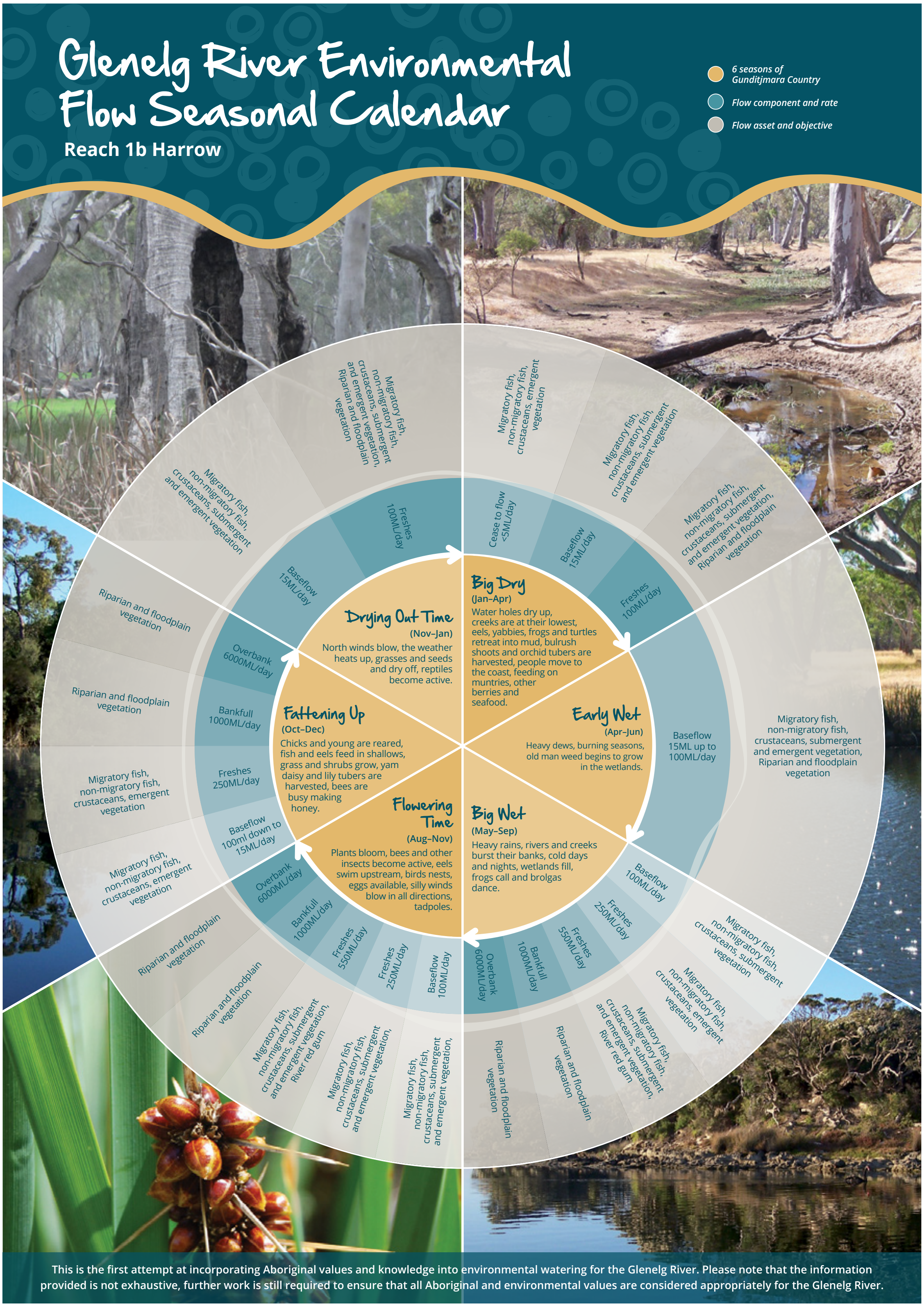


Figure 4.2.2 was produced by the Gunditj Mirring Traditional Owners Aboriginal Corporation and describes the six seasons of Gunditjmara Country.

The northern part of the river upstream of the Harrow area is in Jadawadjali Country, and the south-west part of the system is in Boandik Country. The calendar describes the six seasons alongside flow components for reach 1b of the Glenelg River — from 5-Mile Outlet to Chetwynd River — and aligns them with corresponding watering effects and objectives. The calendar reflects the seasonal flow conditions that all Glenelg River system Traditional Owner groups recognise.

The value of the calendar is in its clear visual depiction of Traditional Owners' knowledge, developed over many generations, of how varying flows correspond to seasonal conditions and broader environmental patterns. The six seasons will continue to be embedded in future environmental flows recommendations and scenario planning.

How proposed watering actions may support cultural values and uses

In planning for environmental flows in the Glenelg River, the Gunditj Mirring Traditional Owners Aboriginal Corporation, the Barengi Gadjin Land Council Aboriginal Corporation and the Burrandies Aboriginal Corporation, together with the Glenelg Hopkins CMA, have considered:

- supporting the health of cultural heritage sites (such as scar trees, ring trees, stone structures, middens and rock paintings) and native plants, which are sources of traditional foods and medicines
- that improving the health and abundance of totem species and their habitat by delivering water for the environment also benefits Traditional Owners' spiritual wellbeing
- supporting contemporary cultural events such as the Johnny Mullagh Cup, a cricket match in March each year; a summer fresh is delivered to support environmental outcomes, and it also supports this event on the river.

Where Traditional Owners are more deeply involved in the planning and/or delivery of environmental water for a particular site, their contribution is acknowledged in **Table 4.2.1** with an icon, as pictured below and also explained in **Figure 1.2.3**. The use of this icon is not intended to indicate that these activities are meeting all the needs of Traditional Owners but is used in the spirit of valuing that contribution.

Watering planned and/or delivered in partnership with Traditional Owners will support Aboriginal cultural values and uses

Social, recreational and economic values and uses

Water for the environment provides social, recreational and economic benefits for those who visit, live or work along the river system. Consultation with Glenelg River communities, landholders, businesses and users has identified and considered these values when planning and managing environmental water releases.

In planning the potential environmental watering actions in **Table 4.2.1**, the Glenelg Hopkins CMA considered how environmental flows could support values and uses, including:

- water-based recreation (such as canoeing and fishing)
- community events and tourism (such as the Johnny Mullagh Cup and visitation)
- socioeconomic benefits (such as stock needs and domestic use: water levels and water quality can rely on environmental water delivery, particularly in summer).

Environmental flows may be planned to align with a social or recreational objective so long as environmental objectives are not compromised. This is indicated in **Table 4.2.1** by an icon, as pictured below and also explained in **Figure 1.2.3**.

Environmental flows support the spawning and recruitment of popular angling species like estuary perch and bream. Local anglers continue to report increased fish activity associated with the delivery of freshes, improving fishing opportunities in the river. Releases also support numerous fishing competitions, including the annual Casterton Angling Society carp competition and the tandanus catfish competition, partnering with local angling clubs.

The timing of the summer/autumn fresh for the Glenelg River is planned to support the annual Johnny Mullagh Cup cricket match between Gunditj Mirring and Barengi Gadjin Traditional Owners.

Also, summer/spring freshes improve conditions at popular riverside campgrounds in the upper reaches of the Glenelg River, including Fulham Reserve near Balmoral and the Johnny Mullagh Reserve at Harrow. Summer freshes in the Glenelg River improve accessibility, water quality and amenity for canoeists planning trips on the river over the summer holiday period.

	Watering will also support angling activities
	Watering will also support water sports activities (e.g. canoeing, kayaking, rowing, swimming, water skiing)
	Watering will also support peaks in visitation (e.g. camping or other public activities on long weekends or school holidays)

The Glenelg Hopkins CMA also manages the Glenelg River Compensation Flow, a consumptive entitlement. This entitlement can be used in conjunction with environmental water to provide a nominal flow for domestic and stock use, and for social and environmental purposes in the Glenelg River downstream of Rocklands Reservoir.

Scope of environmental watering

The term 'environmental watering' refers to the active delivery of held environmental water to support particular environmental objectives by altering the flow in a river or the water level in a wetland. While other terms are sometimes used to describe the delivery of environmental water, 'environmental watering' is deliberately used here and in seasonal watering statements to ensure consistency in the legal instruments that authorise the use of water for the environment in Victoria.

Table 4.2.1 describes the potential environmental watering actions in 2025-26, their expected watering effects — the intended physical or biological effects of the watering action — and the longer-term environmental objectives they support. Each environmental objective relies on one or more potential environmental watering actions and their associated physical or biological effects.

Table 4.2.1 Glenelg system potential environmental watering actions, expected watering effects and environmental objectives

Potential environmental watering action	Expected watering effects	Environmental objectives
Winter/spring low flow in reach 1a (60 ML/day or natural during June to November)	• Maintain water quality for fish and waterbugs • Wet aquatic vegetation to maintain its condition and prevent encroachment by terrestrial species • Maintain shallow-water habitat for fish, waterbugs and platypus	F1  MI1  PR1  V1, V2
Winter/spring low flow in reach 1b (100 ML/day or natural during June to November)		
Winter/spring low flow in reach 2 (160 ML/day or natural during June to November)		
Winter/spring low flow in reach 3 (260 ML/day or natural during June to November)		

Potential environmental watering action	Expected watering effects	Environmental objectives
Winter/spring fresh(es) in reach 1b (one to five freshes of 250 ML/day for one to five days during June to November) **Winter/spring fresh(es) in reach 2 (one to five freshes of 300 ML/day for one to five days during June to November)** **Winter/spring fresh(es) in reach 3 (one to two freshes of 150 ML/day for three days during June to November)**	• Wet benches to improve the condition of emergent vegetation and vegetation on the riverbanks to support recruitment and growth, and maintain habitat diversity • Provide adequate water depth for fish passage and to cue fish movement • Encourage female platypus to select nesting burrows higher up the bank to reduce the risk of a greater flow later in the year, flooding burrows when juveniles are present • Scour sand from pools to improve the quality of fish habitat	F1, G1, PR1, V1, V2
Summer/autumn low flow in reach 1a (10 ML/day during December to May) **Summer/autumn low flow in reach 1b (15 ML/day during December to May)** **Summer/autumn low flow in reach 2 (25 ML/day during December to May)** **Summer/autumn low flow in reach 3 (80 ML/day during December to May)**	• Protect against a rapid decline in water quality in the low-flow period • Maintain edge habitats, pools and shallow-water habitat for fish, waterbugs and platypus • Maintain a near-permanently inundated wetted stream channel to promote the growth of in-stream vegetation and prevent encroachment by terrestrial plants	F1, PR1, V1, V2, WQ1

Potential environmental watering action	Expected watering effects	Environmental objectives
Summer/autumn low flow in reach 0 (0.5 ML/day during December to May)	• Maintain edge habitats, pools and shallow-water habitat for fish and waterbugs (western swamp crayfish) • Maintain a near-permanently wetted stream channel to promote the growth of in-stream vegetation and prevent encroachment by terrestrial plants	F1, MI1, V1, V2
Summer/autumn fresh(es) in reach 1a (one to two freshes of 60 ML/day for two to three days during December to May) 	• Flush fine silt from the stream bed and hard substrate to improve the quality of the fish and waterbug habitat • Wet emergent vegetation on the lower banks to improve its condition • Flush pools to improve water quality and lower temperatures • Provide sufficient flow to allow native fish and platypus to access habitat	F1, G1, MI1, PR1, V1, WQ1
Summer/autumn fresh(es) in reach 1b (one to two freshes of 100 ML/day for two to three days during December to May) 		
Summer/autumn fresh(es) in reach 2 (one to two freshes of 150 ML/day for two to three days during December to May) 		
Summer/autumn fresh(es) in reach 3 (one to two freshes of 150 ML/day for three days each or natural during December to May) 		
Summer/autumn fresh(es) in reach 0 (one to two freshes of 10 ML/day for three days each or natural during December to May)	• Wet emergent vegetation on the lower banks to improve its condition • Flush pools to improve water quality and lower temperatures • Provide sufficient flow to allow native fish to access habitat	F1, V1, V2, WQ1

Scenario planning

Table 4.2.2 outlines potential environmental watering and expected water use in a range of planning scenarios.

Rainfall across the Glenelg catchment in 2024-25 was very much below average, and natural run-off did little to meet any actions for the water year. Environmental water releases over summer helped prevent the worst impacts of the drought conditions. However, there were still periods of below-target deliveries, due to dry conditions. These conditions also resulted in low inflows into headworks storage, with cumulative inflows below the 95 per cent probability of exceedance.

Environmental watering actions in the Glenelg River during 2025-26 will target reaches 1b and 2 because that is where managed flows can have the greatest environmental effect. The carryover supply of environmental water in 2025-26 will still allow a range of watering actions to be delivered in the Glenelg system for the third consecutive year, following the 2022 floods.

The priority environmental objectives for environmental flows in 2025-26 are to:

- maintain channel form and water quality
- maintain connectivity and provide migration opportunities for native fish
- support juvenile recruitment of native fish
- promote in-stream vegetation and edge habitat for waterbugs, fish and platypus
- prevent the establishment of terrestrial plants in the stream bed
- support reach 0 of the Glenelg River with environmental water releases, if conditions and water availability allow.

Delivering a summer/autumn low flow to maintain a continuous flow in reaches 1a, 1b and 2 is the highest-priority potential watering action in all planning scenarios. Monitoring has demonstrated that maintaining a continuous flow and avoiding cease-to-flow events is the most effective way of preventing declines in the abundance and condition of native fish and platypus populations in the Glenelg River. A summer/autumn low flow is the only environmental watering action proposed for reach 2 in the drought planning scenario. In the drought planning scenario, a fresh is not planned for reach 2 because it cannot be delivered with the forecast available supply and would likely have less environmental benefit than a flow delivered in reaches 1a and 1b. It could also be assumed that a fresh targeting 1b would still yield some benefit to reach 2 as it moved downstream. Water for the environment will not be used to deliver a low flow to reach 3 in any planning scenario. This is due to the distance from Rocklands Reservoir to reach 3, which would require excessive volumes of water to meet targets. Low-flow objectives in reach 3 are expected to be met by tributary inflows in average and wet conditions.

Summer/autumn freshes are the next-highest-priority potential watering action in the Glenelg River and are needed to vary the magnitude of the river's flow, support fish migration and meet water quality outcomes. In the drought planning scenario, one summer/autumn fresh is planned for reaches 1a and 1b, where they support the Glenelg River's most flow-sensitive environmental values. As water availability increases in the very dry to wet planning scenarios, an additional fresh and extending the magnitude of freshes to support reach 2 will be prioritised. All reaches, including reach 3, are planned to receive two freshes in the dry through to wet planning scenarios, as the available supply and natural inflows become greater.

Our limited ability to influence the flow in reach 3 in the drought and very dry planning scenarios presents a risk that the reach has undesirably long cease-to-flow events. Cease-to-flow events would contribute to water quality deteriorating, potentially leading to the disconnection of native populations and fish death events. The VEWH and waterway manager must accept this risk due to the water availability and deliverability limitations expected in these planning scenarios. Deliveries to reach 2 in these planning scenarios are expected to result in some through-flow to reach 3 and help maintain water quality in deeper pools, but this cannot be guaranteed.

Planned freshes in the dry through to wet planning scenarios and the maintenance of native species populations in upstream reaches provide the best support for these populations to rapidly recover through reach 3 after periods of drought and very dry conditions.

Environmental watering actions in reach 1a are greatly constrained by the hydraulic interactions of releases from the Rocklands Reservoir wall outlet and Frasers Swamp. Reach 1a is immediately downstream of Rocklands Reservoir, meaning it has little natural inflow and relies heavily on the mandated passing flow and managed environmental flows. However, large releases from Rocklands Reservoir can potentially flood private land adjacent to Frasers Swamp. Therefore, a winter/spring low flow is the largest flow proposed to be delivered to reach 1a in the average and wet planning scenarios if sufficient water is available. While larger releases would likely have an environmental benefit, they are not planned due to the risk of flooding private land.

A winter/spring low flow and freshes are likely to be met naturally in reaches 1b, 2 and 3 in average and wet conditions. Freshes trigger fish and platypus movement, wet vegetation higher up the banks and scour sand from some pool substrates to improve the quality of fish and waterbug habitat.

Water for the environment has been delivered occasionally to reach 0 in recent years. These releases have partly addressed specific environmental requirements and have also been used to help understand what flow magnitudes can be achieved via managed flow releases from Moora Moora Reservoir. A summer/autumn low flow may be delivered to reach 0 in 2025-26 in the very dry through to wet planning scenarios. This will support the recovery of reach 0 post-bushfire and further test environmental responses to managed releases. However, the reach 0 flow is a lower priority than planned deliveries to reaches 1a, 1b and 2 in the drought planning scenario.

During the proposal preparation process, the Glenelg Hopkins CMA used a flow delivery model to inform decisions about the volumes of environmental water required. The model cannot accurately predict the contribution of passing flow to proposed environmental watering actions. This contribution is potentially significant in the average and wet planning scenarios. Therefore, the volumes in **Table 4.2.2** will likely be greater than needed in average and wet planning scenarios.

Carryover will be vital to ensure sufficient water availability to deliver the highest-priority flows during summer and autumn 2026-27 if there are low allocations during the year. The VEWH will work with the Wimmera and Glenelg Hopkins CMAs to refine a carryover target for 2026-27, once winter and spring storage inflows are known and the potential resource outlook for the following year is clear.

Table 4.2.2 Glenelg system environmental watering planning scenarios

Planning scenario	Drought	Very dry	Dry	Average	Wet
Expected conditions	• Little to no inflows to headworks storages • Low to no passing flow for the year • Limited natural run-off year-round and a complete dependence on environmental water over summer/autumn	• Some inflows to storages creating allocations • A small amount of passing flow available • Natural run-off might support winter/spring baseflow targets in the lower reaches	• Better inflows to storages, offsetting any water used for the year and reducing the need to preserve carryover volumes • Passing flow available to support the upper reaches • Natural flow achieves several winter/spring targets and supports lower reaches over summer	• Good inflows to storage, creating good allocations • Passing flow available to support environmental water releases well into summer/autumn • Natural flow meets most winter/spring targets and even meets summer/autumn actions	• Storages spilling and full allocations • Passing flow available to support environmental water releases well into summer/autumn • Natural flow meets most winter/spring targets and even meets summer/autumn actions
Expected availability of water for the environment[1]	• 38,204 ML	• 43,883 ML	• 57,673 ML	• 71,058 ML	• 78,764 ML

Planning scenario	Drought	Very dry	Dry	Average	Wet
Glenelg River – reach 1a					
Potential environmental watering – tier 1 (high priorities)	• Summer/ autumn low flow • Summer/ autumn fresh (one fresh)	• Summer/ autumn low flow • Summer/ autumn freshes (two freshes)	• Summer/ autumn low flow • Summer/ autumn freshes (two freshes)	• Winter/ spring low flow • Summer/ autumn low flow • Summer/ autumn freshes (two freshes)	• Winter/ spring low flow • Summer/ autumn low flow • Summer/ autumn freshes (two freshes)
Potential environmental watering – tier 2 (additional priorities)	• Summer/ autumn fresh (one fresh) • Winter/ spring low flow	• Winter/ spring low flow	• Winter/ spring low flow	• N/A	• N/A
Glenelg River – reach 1b					
Potential environmental watering – tier 1 (high priorities)	• Summer/ autumn low flow • Summer/ autumn fresh (one fresh)	• Summer/ autumn low flow • Summer/ autumn freshes (two freshes)	• Summer/ autumn low flow • Summer/ autumn freshes (two freshes)	• Winter/ spring low flow • Winter/ spring freshes (three freshes) • Summer/ autumn low flow • Summer/ autumn freshes (two freshes)	• Winter/ spring low flow • Winter/ spring freshes (three freshes) • Summer/ autumn low flow • Summer/ autumn freshes (two freshes)
Potential environmental watering – tier 2 (additional priorities)	• Summer/ autumn fresh (one fresh) • Winter/ spring fresh (one fresh) • Winter/ spring low flow	• Winter/ spring fresh (one fresh) • Winter/ spring low flow	• Winter/ spring freshes (two freshes) • Winter/ spring low flow	• Winter/ spring low flow	• N/A

Planning scenario	Drought	Very dry	Dry	Average	Wet
Glenelg River – reach 2					
Potential environmental watering – tier 1 (high priorities)	• Summer/ autumn low flow	• Summer/ autumn low flow • Summer/ autumn freshes (two freshes)	• Summer/ autumn low flow • Summer/ autumn freshes (two freshes)	• Winter/ spring low flow • Winter/ spring freshes (three freshes) • Summer/ autumn low flow • Summer/ autumn freshes (two freshes)	• Winter/ spring low flow • Winter/ spring freshes (five freshes) • Summer/ autumn low flow • Summer/ autumn freshes (two freshes)
Potential environmental watering – tier 2 (additional priorities)	• Summer/ autumn freshes (two freshes) • Winter/ spring low flow • Winter/ spring fresh (one fresh)	• Winter/ spring low flow • Winter/ spring fresh (one fresh)	• Winter/ spring low flow • Winter/ spring freshes (two freshes)	• Winter/ spring low flow	• Winter/ spring low flow
Glenelg River – reach 3					
Potential environmental watering – tier 1 (high priorities)	• N/A	• N/A	• Summer/ autumn freshes (two freshes)	• Winter/ spring low flow • Winter/ spring freshes (two freshes) • Summer/ autumn low flow • Summer/ autumn freshes (two freshes)	• Winter/ spring low flow • Winter/ spring freshes (two freshes) • Summer/ autumn low flow • Summer/ autumn freshes (two freshes)
Potential environmental watering – tier 2 (additional priorities)	• Summer/ autumn freshes (two freshes)	• Summer/ autumn freshes (two freshes)	• N/A	• N/A	• N/A

Planning scenario	Drought	Very dry	Dry	Average	Wet
Glenelg River – reach 0					
Potential environmental watering – tier 1 (high priorities)	• N/A	• Summer/ autumn low flow	• Summer/ autumn low flow	• Summer/ autumn low flow • Summer/ autumn freshes (two freshes)	• Summer/ autumn low flow • Summer/ autumn freshes (two freshes)
Potential environmental watering – tier 2 (additional priorities)	• Summer/ autumn low flow • Summer/ autumn freshes (two freshes)	• Summer/ autumn freshes (two freshes)	• Summer/ autumn freshes (two freshes)	• N/A	• N/A
Possible volume of water for the environment required to achieve objectives	• 11,781 ML (tier 1) • 42,177 ML (tier 2)	• 12,010 ML (tier 1) • 40,128 ML (tier 2)	• 13,635 ML (tier 1) • 38,503 ML (tier 2)	• 25,843 ML (tier 1) • 32,265 ML (tier 2)	• 26,159 ML (tier 1) • 30,133 ML (tier 2)
Priority carryover requirements for 2026-27	• The VEWH will work with the Wimmera and Glenelg Hopkins CMAs to refine a carryover target for 2026-27 once winter and spring storage inflows are known and the potential resource outlook for the following year is clear.				

1 Volume represents the available water for the Wimmera and Glenelg systems under the shared *Wimmera and Glenelg Rivers Environmental Entitlement 2010* and is the sum of carryover and estimated new allocations

4.3 Wimmera system

Waterway manager – Wimmera Catchment Management Authority

Storage manager – Grampians Wimmera Mallee Water

Environmental water holders – Victorian Environmental Water Holder and Commonwealth Environmental Water Holder

System overview

Barringgi Gadyin **(Wimmera River) rises in the Pyrenees Ranges near Elmhurst and flows through Horsham, Dimboola and Jeparit before terminating at Lake Hindmarsh, which is Victoria's largest freshwater lake and the first of a series of terminal lakes. The Wimmera River receives flows from several regulated tributaries, including the MacKenzie River, Mount William Creek and Burnt Creek (Figure 4.3.1). These tributaries, plus Bungalally Creek and the Wimmera River below Mount William Creek, can receive water for the environment. In exceptionally wet periods, Lake Hindmarsh will overflow into Outlet Creek and then to Lake Albacutya, an internationally recognised Ramsar-listed wetland. Many wetlands beyond Lake Albacutya have not filled with water for decades.**

Water in the Wimmera system is stored in three on-stream reservoirs (Lake Wartook on the MacKenzie River, Lake Lonsdale on Mount William Creek and Lake Bellfield on Fyans Creek) and in several off-stream storages (Taylors Lake, Lake Fyans and Toolondo Reservoir). A channel system enables water to be moved between storages. Water can also be transferred from Rocklands Reservoir in the Glenelg system to the Wimmera system via the Rocklands-Toolondo Channel and from Moora Moora Reservoir via the Moora Channel. The connected storages and channels are collectively called the Wimmera-Mallee System Headworks. Water harvested in the system headworks is used for town, stock and domestic supply throughout the Wimmera catchment and parts of the Avoca, Hopkins, Loddon, Glenelg and Mallee catchments. Passing flows are provided to the Wimmera River and lower Mount William and Fyans creeks.

Priority reaches in the Wimmera system that can receive water for the environment are Wimmera River reaches 3 and 4, MacKenzie River reaches 2 and 3, upper and lower Mount William Creek, upper and lower Burnt Creek and Bungalally Creek.

Yarriambiack Creek is a distributary of the upper Wimmera River that would have naturally received a flow during high-flow or flood events. Lower reaches of the Wimmera River have priority for environmental water, which means no water is diverted for environmental watering to this creek. Grampians Wimmera Mallee Water provides recreational entitlements via the Wimmera-Mallee Pipeline to the creek at the Warracknabeal, Brim and Beulah weir pools.

The flow in the downstream reach of the Wimmera River is intermittent and experiences regular cease-to-flow episodes. During 2026, four drought refuges in the main channel of reach 4 of the Wimmer River — at Lochiel, Arkona, Antwerp and Tarranyurk — are expected to be connected to the Wimmera-Mallee Pipeline network to support downstream reaches during cease-to-flow episodes and increase the rate of recovery. Connection of these sites to the pipeline will allow for the efficient delivery of water to them when conditions don't allow us to maintain flows from headworks storages.

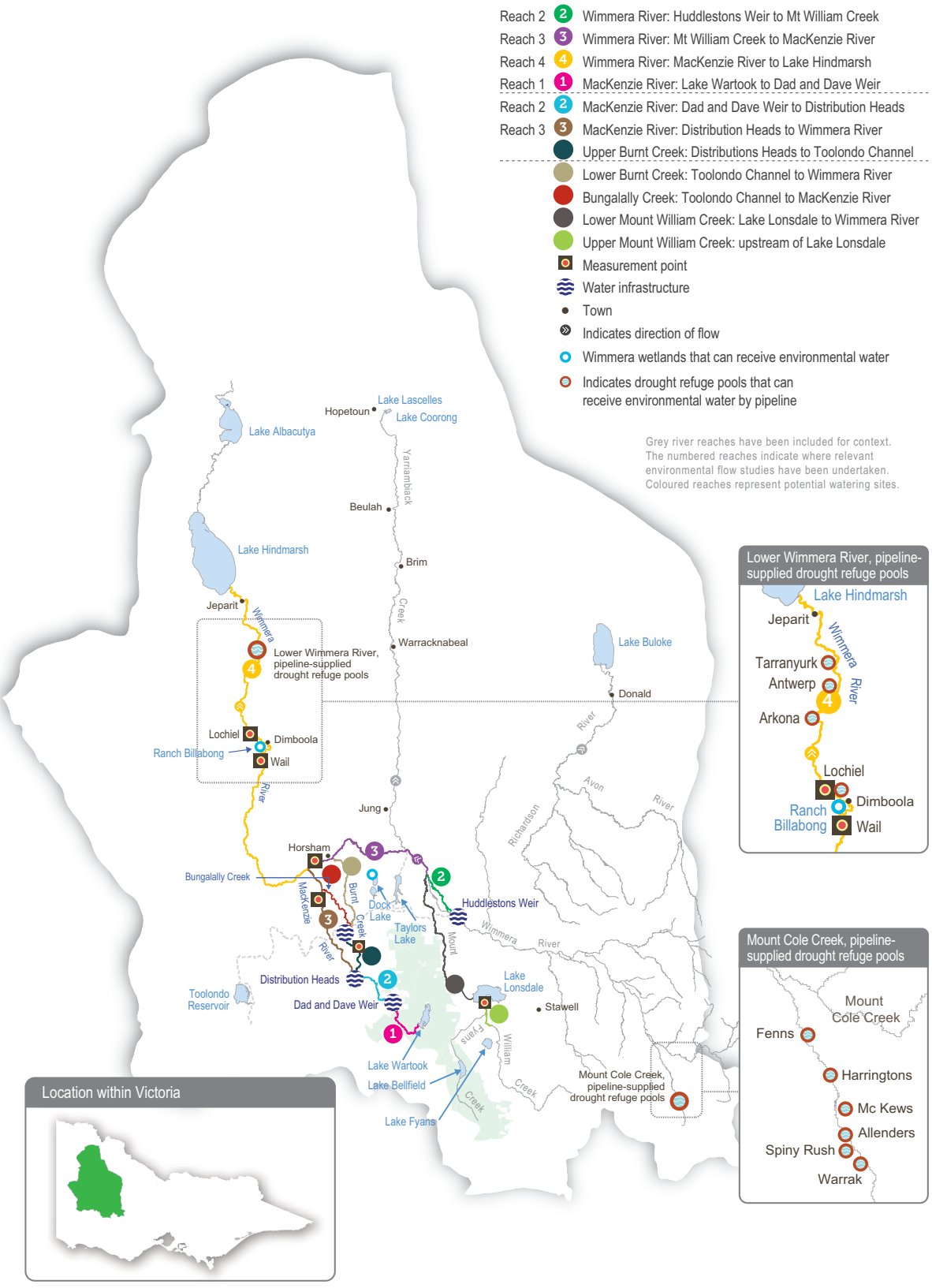
Downstream of Jeparit, the Wimmera River reaches the terminal lakes, including Lake Hindmarsh, a wetland of national significance and Lake Albacutya, recognised internationally under the Ramsar Convention. These lakes do not usually receive environmental water but rely mainly on passing flow and/or unregulated flows to provide suitable inundation to achieve environmental outcomes. However, in a wet year, regulated releases are of some value for raising the levels of terminal lakes and improving environmental outcomes.

Dock Lake, near Horsham, would have naturally filled via spills from nearby Green Lake when there was significant run-off from the northern edge of the Grampians. In the 1930s, Dock Lake was modified to allow it to be used as a water storage for irrigation supply in the Wimmera-Mallee system. Dock Lake was removed from the supply system after the Wimmera-Mallee Pipeline was completed in 2010. Water can be delivered to Dock Lake from Green Lake via a gravity-fed channel when there is sufficient water in Green Lake.

Ranch Billabong, near Dimboola, is an anabranch of the Wimmera River at Dimboola. It is on land managed by Barengi Gadjin Land Council Aboriginal Corporation. The anabranch was disconnected from the Wimmera River by changes to a road that traverses land between the river and the billabong. Restoring elements of the natural water regime at Ranch Billabong aims to improve habitat for native animal and plant communities and is an important outcome for Traditional Owners.

Mt Cole Creek is an upper tributary of the Wimmera River, high in the upper catchment. Construction of the East Grampians Rural Pipeline is planned to start in 2026 with the source of water from Lake Fyans. This new pipeline and planned connection of Mt Cole Creek near Warrak is expected to allow for the delivery of small volumes of environmental water to support up to six drought refuge pools between Warrak and the Ararat-St Arnaud Road.

Figure 4.3.1 Wimmera system



Environmental values

The Wimmera River supports abundant native fish populations, including one of Victoria's few self-sustaining populations of freshwater catfish. The Wimmera River also supports native waterbird, turtle, frog and rakali (water rat) populations.

The MacKenzie River contains the only confirmed remaining platypus population in the Wimmera system and supports locally important populations of native fish, including river blackfish and southern pygmy perch. It also supports populations of threatened Glenelg spiny crayfish, western swamp crayfish and turtles, as well as the critically endangered Wimmera bottlebrush. Managed releases from Lake Wartook for urban supplies and an environmental flow maintain flows in reaches 2 and 3 of the MacKenzie River and provide refuges for regionally important populations during dry periods.

Vegetation along Burnt and Bungalally creeks provides habitat corridors for terrestrial wildlife. Upper Burnt Creek contains an important native fish community and a threatened western swamp crayfish population, which is also becoming established in lower Burnt Creek. Mount William Creek supports regionally important populations of obscure galaxias, southern pygmy perch and rakali (water rats).

Dock Lake is a natural wetland that was modified and used as part of the Wimmera-Mallee System Headworks until 2010. When wet, Dock Lake provides feeding and breeding habitat for large numbers of waterbirds and frogs.

Ranch Billabong is a small wetland near Dimboola that supports river redgums, various aquatic plant species, waterbirds and frogs. It also includes a range of culturally significant plant species (such as sneezeweed). This site was affected by recent fires, with about 30 per cent of the trees that surround the billabong affected.

Mt Cole Creek is a tributary in the upper Wimmera catchment that supports western swamp crayfish and rakali (water rats) as well as many fish species, including southern pygmy perch, obscure galaxias and flathead gudgeon.

In very high-flow periods, the Wimmera River discharges to Lake Hindmarsh and Lake Albacutya, large sub-terminal lakes. Lake Albacutya is a Ramsar-listed wetland, and Lake Hindmarsh is Victoria's largest freshwater lake. Both provide significant habitat for waterbirds when wet.

When conditions are very dry and the Wimmera River diminishes to a series of disconnected pools, the pockets of permanent water that can be supplied via the pipeline network allow the maintenance of high-quality water in refuges for aquatic and terrestrial plants and animals. If appropriate water levels, quality and conditions can be maintained in these refuges during dry periods, they provide essential habitat for water-dependent species (such as fish, algae, wetland plants and waterbugs), maintaining populations until wetter conditions return and allow the survivors to disperse.

Environmental objectives in the Wimmera system

	A1 – Maintain frog populations by providing feeding and breeding habitat
	**B1** – Maintain waterbird populations by providing roosting, feeding and breeding habitat in floodplain wetlands
	F1 – Protect and increase native fish populations, including one of Victoria's few self-sustaining freshwater catfish populations
	**G1** – Maintain the channel's capacity and diversity
	**MI1** – Increase the abundance and diversity of waterbugs to break down dead organic matter and support the waterway's food web **MI2** – Maintain crayfish populations by providing feeding and breeding habitat
	**PR1** – Increase the abundance and distribution of platypus populations by providing places to breed and feed, as well as opportunities for juveniles to disperse
	**T1** – Maintain turtle populations by providing feeding and breeding habitat
	**V1** – Maintain the condition, abundance and diversity of native aquatic, emergent and streamside vegetation **V2** – Prevent the establishment of terrestrial plans in the stream bed
	WQ1 – Maintain water quality to provide suitable conditions for waterbugs, native fish and other water-dependent animals and plants

Traditional Owner cultural values and uses

The Wimmera's waterways are the lifeblood of the Wotjobaluk, Jaadwa, Jadawadjali, Wergaia and Jupagulk people, collectively known as the Wotjobaluk Nations and represented by the Barengi Gadjin Land Council Aboriginal Corporation (BGLC).

In August 2022, the Victorian Government and the Wotjobaluk Nations entered into a Recognition and Settlement Agreement. In the agreement, the Victorian Government recognised that the Wotjobaluk Nations have a special relationship with *Barringgi Gadyin*, and that the river has a central place in their culture. The Victorian Government acknowledged in the agreement the aspirations of the Traditional Owners regarding water, including to monitor and manage cultural and environmental flows associated with waterways. In December 2005, the Federal Court made its first determination that native title existed in south-east Australia, including in much of the lower *Barringgi Gadyin*.

Increasing the involvement of Traditional Owners in planning and managing environmental flows and progressing opportunities towards self-determination in the environmental watering program is a core commitment of the VEWH and its program partners. This is reinforced by legislation and policy commitments, including the *Water Act 1989*, the ***Victorian Aboriginal Affairs Framework***, the 2016 ***Water for Victoria***, the 2022 ***Water is Life: Traditional Owner Access to Water Roadmap*** and, in some cases, agreements under the *Traditional Owner Settlement Act 2010*.

In planning for environmental flows in *Barringgi Gadyin*, BGLC and the Wimmera CMA work together to support cultural objectives and values, including supporting contemporary cultural events (such as the Wimmera River Challenge).

Environmental flows may be planned to align with cultural benefits so long as environmental outcomes are not compromised. In the Wimmera system, the Wimmera CMA and BGLC work in partnership to support cultural values at Ranch Billabong. Works to permanently reconnect the Wimmera River to the Ranch Billabong anabranch have been completed, with infrastructure installed to permanently reconnect *Barringgi Gadyin* to the Ranch Billabong anabranch. This infrastructure, which BGLC manages, improves water flow and water quality into the billabong and improves BGLC's capacity to manage the site and reinstate a more natural flow regime. The delivery of water at Ranch Billabong aims to provide a more natural flooding regime, restore indigenous plant species (such as old man weed and sneezeweed) and animal habitats, control selected weed species and improve amenity and suitability for gatherings and events (such as earth oven and bark canoe cultural activities). If the river flow is too low to connect via the new infrastructure, pumping water for the environment remains a management option.

Environmental flows during the past five years have improved water quality and vegetation condition, consistent with the cultural objectives of the Traditional Owners. BGLC manages the site and has controlled weed species and enhanced accessibility by building walking tracks and culvert crossings around the billabong.

Where Traditional Owners are more deeply involved in the planning and/or delivery of environmental water for a particular site, their contribution is acknowledged in **Table 4.3.1** with an icon, as pictured below and also explained in **Figure 1.2.3**. The use of this icon is not intended to indicate that these activities are meeting all the needs of Traditional Owners but is used in the spirit of valuing that contribution.

Watering planned and/or delivered in partnership with Traditional Owners will support Aboriginal cultural values and uses

Social, recreational and economic values and uses

In planning the potential environmental watering actions in **Table 4.3.1**, the Wimmera CMA considered how environmental flows could support values and uses, including:

- water-based recreation (such as canoeing, fishing, rowing and water skiing)
- riverside recreation and amenity (such as birdwatching, cycling, running and walking)
- community and tourism events (such as fishing competitions at Dimboola, Jeparit and Horsham; rowing at Dimboola; the Kannamaroo Festival at Horsham, including the Wimmera River Duck Race; the Wimmera River Park Run; and the Peter Taylor Memorial Barefoot Water Ski Tournament and Night Jump at Dimboola)

- supporting small businesses, including chartered river cruises, pop-up food vendor caravans and general visitation
- socioeconomic benefits (such as for diverters for irrigation, stock needs and domestic use; water levels and water quality, which can rely on environmental water delivery, particularly in summer; and associated tourism events).

Environmental flows may be planned to align with a social or recreational objective so long as environmental objectives are not compromised. This is indicated in **Table 4.3.1** by an icon, as pictured opposite and also explained in **Figure 1.2.3**. This includes when the Wimmera CMA, in consultation with stakeholders, refrains from releasing environmental water from water storages at peak recreational times. It does so only when this does not compromise environmental outcomes in Wimmera waterways to ensure maximum water levels in these storages.

Water for the environment can temporarily raise water levels in Horsham, Dimboola and Jeparit weir pools to improve conditions for community events, including fishing competitions and water skiing and rowing events. Water for the environment held in the weir pools is released after community events to support environmental objectives further downstream when required.

	Watering will also support angling activities
	Watering will also support water sports activities (e.g. canoeing, kayaking, rowing, swimming, water skiing)

Scope of environmental watering

The term 'environmental watering' refers to the active delivery of held environmental water to support particular environmental objectives by altering the flow in a river or the water level in a wetland. While other terms are sometimes used to describe the delivery of environmental water, 'environmental watering' is deliberately used here and in seasonal watering statements to ensure consistency in the legal instruments that authorise the use of water for the environment in Victoria.

Table 4.3.1 describes the potential environmental watering actions in 2025-26, their expected watering effects — the intended physical or biological effects of the watering action — and the longer-term environmental objectives they support. Each environmental objective relies on one or more potential environmental watering actions and their associated physical or biological effects.

Table 4.3.1 Wimmera system potential environmental watering actions, expected watering effects and environmental objectives

Potential environmental watering action	Expected watering effects	Environmental objectives
Wimmera River – reach 4		
Winter/spring low flow (5-30 ML/day during June to November) 	• Maintain access to habitat for native fish, waterbugs and in-stream vegetation At 30 ML/day, the effects above plus: • an increased-magnitude low flow will allow for this action to reach lower parts of the reach and open increasing areas of habitat • flow variability to maintain habitat diversity	F1  MI1  V1
Small winter/spring fresh(es) (one to five freshes of 70 ML/day for one to four days during June to November) 	• Increase water depth to provide a stimulus for fish movement • Provide flow variability to maintain water quality and fish habitat diversity • Prevent a decline in water quality by flushing pools during periods of low flow	F1 WQ1

Potential environmental watering action	Expected watering effects	Environmental objectives
Medium winter/ spring fresh(es) (one to three freshes above 200 ML/day for one to three days during June to November)	• Provide variable flow during the high-flow season for fish movement • Provide flow variability to maintain water quality and fish habitat diversity • Wet lower benches, entrain organic debris and maintain habitat for waterbugs and fish • Flush surface sediments from hard substrates to support waterbugs	F1, MI1, WQ1, V1
Large winter/spring fresh(es) (one to two freshes of above 500 ML/day during June to November)	• Cue fish spawning and movement	F1
Summer/autumn low flow (15 ML/day or natural during December to May)	• Maintain edge habitats in deeper pools and in-stream habitat to support native fish populations and waterbugs • Maintain soil moisture for streamside vegetation and a near-permanently inundated stream channel for aquatic vegetation • Prevent the growth of terrestrial plants in the stream bed	F1, MI1, V1, V2
Summer/autumn fresh(es) (one to three freshes of 70-100 ML/day for two to seven days during December to May)	• Flush pools to prevent a decline in water quality and to maintain habitat for fish and waterbugs • Provide fish passage to allow fish to move through the reach	F1, WQ1, MI1
Year-round, pipeline-supplied drought refuge top-ups (Lochiel, Arkona, Antwerp and Tarranyurk)	• Maintain edge and shallow-water habitat for native fish and waterbugs • Maintain water quality • Maintain soil moisture for streamside vegetation	F1, MI1, MI2, WQ1, V1

Potential environmental watering action	Expected watering effects	Environmental objectives
MacKenzie River – reach 2		
Winter/spring low flow (2-27 ML/day during June to November)	• Maintain a near-permanently inundated stream channel for aquatic vegetation and prevent the growth of terrestrial plants in the stream bed Above 10 ML/day, the effects above plus: • maintain edge habitats and deeper pools and runs for waterbugs and platypus • maintain soil moisture for streamside vegetation • maintain pool habitat for native fish and crayfish populations	
Winter/spring freshes (one to five freshes of 15-55 ML/day for two to seven days during June to November)	• Maintain soil moisture for streamside vegetation At 55 ML/day, the effects above plus: • stimulate fish movement by increasing flow rates and water depth, and increase habitat availability for platypus and waterbugs • flush pools to prevent a decline in water quality	
Summer/autumn low flow (2-10 ML/day during December to May)	• Maintain edge habitats and deeper pools and runs for waterbugs and platypus • Maintain soil moisture for streamside vegetation and a near-permanently inundated stream channel for aquatic vegetation, and prevent the growth of terrestrial plants in the stream bed • Maintain pool habitat for native fish and crayfish populations	
Summer/autumn freshes (one to four freshes of 5-50 ML/day for two to seven days each during December to May)	• Flush pools to prevent a decline in water quality At 50 ML/day, the effects above plus: • provide variable flow during the low-flow season for waterbugs (over wood debris to increase biofilm abundance as a food source) and fish movement • maintain water quality and habitat diversity	

Potential environmental watering action	Expected watering effects	Environmental objectives
MacKenzie River – reach 3		
Winter/spring low flow (2-10 ML/day during June to November)	• Maintain a near-permanently inundated stream channel for aquatic vegetation and prevent the growth of terrestrial plants in the stream bed At 10 ML/day, the effects above plus: • maintain edge habitats and deeper pools and runs for waterbugs and platypus • maintain soil moisture for streamside vegetation • maintain pool habitat for native fish and crayfish populations	F1  MI1, MI2  V1, V2
Winter/spring freshes (three to five freshes of 35 ML/day for two to seven days during June to November)	• Stimulate fish movement • Maintain water quality and habitat diversity	F1 WQ1
Summer/autumn low flow (2-10 ML/day during December to May)	• Maintain a near-permanently inundated stream channel for aquatic vegetation and prevent the growth of terrestrial plants in the stream bed At 10 ML/day, the effects above plus: • maintain edge habitats and deeper pools and runs for waterbugs and platypus • maintain soil moisture for streamside vegetation • maintain pool habitat for native fish and crayfish populations	F1  MI1, MI2  V1, V2
Summer/autumn freshes (three or four freshes of 35 ML/day for two to seven days during December to May)	• Provide variable flow during the low-flow season for waterbugs and fish movement • Maintain water quality and habitat diversity	F1  MI1, MI2 WQ1
Upper Burnt Creek		
Year-round low flow (1 ML/day)	• Maintain edge habitats and shallow-water habitat for waterbugs • Maintain soil moisture for streamside vegetation and a near-permanently inundated stream channel for aquatic vegetation, and prevent the growth of terrestrial plants in the stream bed • Maintain a sufficient area of pool habitat for native fish and crayfish populations • Maintain water quality	F1  MI1, MI2 WQ1  V1, V2

Potential environmental watering action	Expected watering effects	Environmental objectives
Winter/spring fresh(es) (one to five freshes of 15-60 ML/day for three to seven days during June to November)	• Maintain soil moisture for streamside vegetation and a near-permanently inundated stream channel for aquatic vegetation, and prevent the growth of terrestrial plants in the stream bed • Allow fish to move throughout the reach Above 30 ML/day, the effects above plus: • flush sediments from hard substrates to increase biofilm production and food for waterbugs • maintain edge habitats and shallow-water habitat for waterbugs	F1  MI1, MI2  V1, V2
Summer/autumn fresh(es) (one to three freshes of 15-30 ML/day for two to seven days during December to May)	• Prevent a decline in water quality by flushing pools in the low-flow season • Allow fish to move throughout the reach • Flush sediments from hard substrates to increase biofilm production and food for waterbugs	F1  MI1, MI2 WQ1
Lower Burnt Creek		
Freshes (four freshes of 15 ML/day for three to seven days at any time)	• Inundate streamside vegetation to maintain plant condition and facilitate recruitment • Move organic debris in the channel to support waterbugs • Maintain the structural integrity of the channel • Maintain water quality • Maintain a sufficient area of pool habitat for native fish and crayfish populations	F1  MI1, MI2 WQ1  V1, V2  G1
Bankfull fresh (one fresh of 45 ML/day for two days at any time)	• Inundate streamside vegetation to maintain plant condition and facilitate recruitment • Move organic debris in the channel to support waterbugs • Maintain the structural integrity of the channel and prevent the loss of channel capacity	 MI1  V1  G1
Bungalally Creek		
Bankfull fresh (one fresh of 60 ML/day for two days at any time)	• Inundate the streamside zone to maintain its condition and facilitate the recruitment of streamside vegetation communities • Maintain the structural integrity of the channel and prevent the loss of channel capacity	 V1  G1

Potential environmental watering action	Expected watering effects	Environmental objectives
Lower Mount William Creek		
Winter/spring freshes (three to seven freshes of 30-40 ML/day for two to seven days during July to November)	• Maintain edge habitats and shallow-water habitat for waterbugs and endemic fish • Maintain soil moisture for streamside vegetation and a near-permanently inundated stream channel for aquatic vegetation, and prevent the growth of terrestrial plants in the stream bed • Maintain water quality	F1  MI1, MI2 WQ1  V1  G1
Winter/spring fresh(es) (one to five freshes of 100 ML/day for three to seven days during June to November)	• Wet benches to entrain organic debris and allow native fish to move throughout the reach • Flush surface sediments from hard substrates to support waterbugs • Inundate the streamside zone to maintain its condition and facilitate the recruitment of streamside vegetation communities • Improve water quality	F1  MI1, MI2 WQ1  V1
Summer/autumn freshes (three freshes of 30-50 ML/day for seven days during December to May)	• Prevent a decline in water quality by flushing pools during low flow • Provide a variable flow and allow the movement of fish and waterbugs throughout the reach during the low-flow season	F1  MI1, MI2 WQ1
Upper Mount William Creek		
Top-up of pools (summer/autumn)	• Maintain edge and shallow-water habitat for native fish and waterbugs • Maintain water quality	F1  MI1, MI2 WQ1
Dock Lake		
Winter/spring partial fill	• Trigger the growth and germination of wet-phase wetland vegetation communities • Support feeding and breeding habitat for waterbirds, frogs, waterbugs and turtles	F1  MI1, MI2 WQ1  V1  B1  T1

Potential environmental watering action	Expected watering effects	Environmental objectives
Ranch Billabong		
Top-ups (winter/spring and summer/autumn)	• Inundate wetland vegetation to maintain plant condition and facilitate recruitment • Improve water quality for turtles, fish, frogs and waterbirds	WQ1 V1
Mt Cole Creek drought refuge pools		
Year-round, pipeline-supplied drought refuge top-ups	• Maintain edge and shallow-water habitat for native fish and waterbugs • Maintain water quality	F1 MI1, MI2 WQ1

Scenario planning

Table 4.3.2 outlines potential environmental watering and expected water use in a range of planning scenarios.

Rainfall across the Wimmera catchment in 2024-25 was very much below the long-term average. Low natural river flows meant environmental water was used to target actions planned for delivery in the very dry planning scenario. Very dry conditions and blue-green algae outbreaks in Lake Lonsdale and Taylors Lake diminished the ecological value of environmental water carried over in 2024-25 to Wimmera system waterways. The recovery of catchments after fires across large areas of the Grampians and Little Desert national parks in summer 2024-25 is expected to be an important factor in water availability and quality in 2025-26, which will guide the delivery of potential watering actions. In the drought, very dry and dry planning scenarios, the expected conditions will limit our ability to substantially alter flows and will restrict objectives to the maintenance of the Wimmera system's environmental values. If there is average or above-average rainfall, as expected in the average and wet planning scenarios, natural streamflows will increase our ability to influence flows with environmental water, and our objectives will extend to improving ecological values.

Wimmera River

In all planning scenarios, the highest-priority potential watering actions in the Wimmera River include a low flow and small freshes throughout the year. These flows will help maintain diverse aquatic habitats and suitable water quality along the length of the river and provide opportunities for fish to move to access resources or breed. In the drought and very dry planning scenarios, a low flow may be delivered below the recommended magnitude to conserve water, but it may be increased at any time or supplemented with freshes if needed to manage potential water quality issues. In the average and wet planning scenarios, there should be enough water to deliver a low flow at the recommended magnitude year-round and additional freshes to boost the river's environmental health.

The Wimmera CMA may temporarily restrict or cease deliveries of water for the environment during the spring low-flow period to encourage carp to congregate below the Horsham weir (and potentially at other suitable locations) so they can be removed using electrofishing. Any cease-to-flow event would have a short duration and be followed by a fresh to avoid water quality problems and prevent harm to native fish. Restricting the flow to manage carp will only be attempted in the cooler seasons to avoid potential water quality problems and may not be possible in wetter conditions.

Increased water availability and greater contributions from natural run-off in dry, average and wet conditions will allow larger freshes to be delivered to provide opportunities for broader fish movement, improve the composition and condition of vegetation on banks and benches within the channel and wash organic matter into the river to support riverine food webs. More frequent and larger freshes will likely be delivered in average and wet conditions, although they may also occur naturally.

A large spring fresh may be trialled in average and wet conditions in 2025-26 to trigger golden perch spawning. A regular stocking program mainly sustains golden perch populations in the Wimmera River, but numerous fish exhibited spawning behaviour in response to a large natural event in November 2021, and the Wimmera CMA is keen to see if natural spawning and recruitment can be supported with environmental watering. The flow volume to trigger golden perch spawning in the Wimmera River is unknown, and there is also some uncertainty about the maximum environmental flow that can be delivered through reach 4 of the Wimmera River. The Wimmera CMA aims to work with Grampians Wimmera Mallee Water (the storage manager) to coordinate releases from multiple storages to deliver the largest possible flow to reach 4 (within current system constraints) during the spring golden perch breeding season. The trial will only proceed if suitable monitoring is used to assess fish responses. The peak flow volume will also be measured to understand the largest flow that can be delivered through the system and to inform future flow plans.

If connections are established to drought refuge pools in the lower Wimmera in 2025-26 and conditions are such that these pools cannot be supported with releases from headworks storages, four sites — at Lochiel, Arkona, Antwerp and Tarranyurk — may receive deliveries of environmental water via the pipeline network in the drought and very dry planning scenarios. These actions have been included in planning as tier 2 actions, as the delivery infrastructure had not been completed at the time of writing.

In the wet planning scenario, actions planned for the Wimmera and MacKenzie rivers may provide an increased volume of water reaching lakes Hindmarsh and Albacutya.

MacKenzie River/Burnt Creek/ Bungalally Creek

Limited water availability from Lake Wartook in the drought, very dry and dry planning scenarios is expected to reduce the influence on flow in MacKenzie River reach 3. In these conditions, the highest priority will be to maintain connectivity by delivering a low flow in MacKenzie River reach 2 and supporting drought refuge pools in upper Burnt Creek. If supply and conditions allow, any environmental water that reaches Distribution Heads Weir may be used to support drought refuge pools in the upper section of MacKenzie River reach 3 as well. In the drought, very dry and dry planning scenarios, freshes may be targeted but will only be delivered as needed to prevent poor water quality and are likely to be delivered at the lower end of the planned magnitude and duration to conserve the available supply.

The expected conditions in the average and wet planning scenarios would result in higher natural and operational flows and provide for increased access to water for the environment from Lake Wartook. In these conditions, target watering will extend to MacKenzie River reach 3 and deliver a low flow year-round and small-to-medium freshes throughout the year. The low flow will aim to maintain habitat for native fish, platypus and crayfish that recruited or improved their condition in recent years. The freshes will aim to improve water quality, transport organic material, support fish and platypus dispersal and water streamside vegetation. In the average and wet planning scenarios, freshes in the MacKenzie River may be delivered at their full recommended magnitude and duration to increase opportunities for native fish and platypus to disperse and to increase the quality and quantity of their food to improve their condition and provide potential breeding opportunities. The target volume of winter/spring freshes in the MacKenzie River and upper Burnt Creek will vary depending on the weather and the observed environmental conditions, including the vegetation's response to wetting. Watering actions for MacKenzie River reach 3 typically provide a suitable flow to meet objectives in reach 2.

A bankfull flow may be delivered to Bungalally Creek and lower Burnt Creek in the average and wet planning scenarios to maintain the channel's form and improve the health of the streamside vegetation. Freshes of 15 ML per day may also be delivered to the lower Burnt Creek to top up and refresh refuge pools in the same planning scenarios. These flows can only be delivered during periods of high natural flow throughout the system, so they are not included in the drought, very dry or dry planning scenarios.

Mount William Creek

Limited water availability in Lake Lonsdale is expected to restrict the use of water for the environment to a low flow and modest freshes targeting lower Mount William Creek in the drought, very dry and dry planning scenarios. In the average and wet planning scenarios, water from Lake Lonsdale will be used to help meet environmental flow targets in the Wimmera River. This water will be delivered via lower Mount William Creek and is expected to meet the planned environmental watering actions for lower Mount William Creek en route.

Water from Lake Fyans may be used in any planning scenario in 2025-26 to top up refuge pools in upper Mount William Creek to improve water quality and habitat availability for native fish.

Ranch Billabong, Dock Lake and Mt Cole Creek

Water for the environment will likely be used to top up water levels in Ranch Billabong in drought, very dry and dry conditions to maintain water quality and support the ongoing recovery of the river red gum and associated understorey vegetation surrounding the billabong. In wet and average conditions, the billabong is expected to fill naturally.

Environmental flow objectives for Dock Lake require large volumes of water that can only be achieved with significant contributions from natural events and only when Green Lake is full. These conditions will only likely be met in the wet planning scenarios in 2025-26.

If the new delivery infrastructure is established to Mt Cole Creek in 2025-26 and conditions are such that the drought refuge pools at Lochiel, Arkona, Antwerp and Tarranyurk require support, they may receive deliveries of environmental water via the pipeline network. Deliveries to Mt Cole Creek have been included in planning as a tier 2 action in the drought, very dry and dry planning scenarios, given the delivery infrastructure had not been completed at the time of writing.

Carryover

Carryover will be vital to ensure sufficient water is available to deliver the highest-priority potential watering actions during summer and autumn 2026-27 if there are low allocations during 2025-26. The VEWH will work with the Wimmera and Glenelg Hopkins CMAs to set a carryover target for 2026-27 once winter and spring storage inflows are known and the potential resource outlook for the following year is clear.

Table 4.3.2 Wimmera system environmental watering planning scenarios

Planning scenario	Drought	Very dry	Dry	Average	Wet
Expected river conditions	• Infrequent, unregulated flow for reach 2 of the MacKenzie River, upper Burnt Creek and lower Mt William Creek • Regulated releases provide flow at other times and locations	• Periodic, unregulated flow for reach 2 of the MacKenzie River, upper Burnt Creek and lower Mt William Creek • Regulated releases provide flow at other times and locations	• Periodic, unregulated flow for reach 2 of the MacKenzie River, upper Burnt Creek and lower Mt William Creek • Regulated releases provide flow at other times and locations, apart from the modest passing flow	• Regular, unregulated flow for reach 2 of the MacKenzie River, upper Burnt Creek and lower Mt William Creek • Regular passing flow and unregulated releases for the Wimmera River and lower Mt William Creek • Regulated releases provide flow at other times and locations	• Regular, unregulated flow for reach 2 of the MacKenzie River, upper Burnt Creek and lower Mt William Creek • Frequent passing flow and unregulated releases for the Wimmera River and lower Mt William Creek • Regulated releases provide flow at other times and locations
Predicted supply of water for the environment under the Wimmera-Glenelg environmental entitlement[1]	• 38,204 ML	• 43,883 ML	• 57,673 ML	• 71,058 ML	• 78,764 ML
Predicted supply of water for the environment under the CEWH's entitlement[2]	• 5,108 ML	• 5,108 ML	• 5,108 ML	• 5,108 ML	• 33,108 ML

Planning scenario	Drought	Very dry	Dry	Average	Wet
Wimmera River – reach 4					
Potential environmental watering – tier 1 (high priorities)	• Winter/spring low flow (at 5 ML/day) • Small winter/spring freshes (two freshes each of three days) • Summer/autumn low flow (partially achieved at 5 ML/day) • Summer/autumn freshes (three freshes)		• Winter/spring low flow (at 30 ML/day) • Small winter/spring freshes (three freshes each of two days) • Summer/autumn low flow (at 15 ML/day) • Summer/autumn freshes (three freshes)	• Winter/spring low flow (at 30 ML/day) • Small winter/spring freshes (two freshes each of three days) • Medium winter/spring fresh (one fresh of two days) • Large winter/spring fresh (one fresh of two days) • Summer/autumn low flow (at 15 ML/day) • Summer/autumn freshes (three freshes)	• Winter/spring low flow (at 30 ML/day) • Small winter/spring fresh (one fresh of four days) • Medium winter/spring fresh (one fresh of three days) • Large winter/spring freshes (two freshes of three days) • Summer/autumn low flow (at 15 ML/day) • Summer/autumn freshes (three freshes)
Potential environmental watering – tier 2 (additional priorities)	• Winter/spring low flow (at higher-magnitude range) • Summer/autumn low flow (fully achieved at 15 ML/day) • Year-round, pipeline-supplied drought refuge top-ups (Lochiel, Arkona, Antwerp and Tarranyurk)		• N/A	• N/A	• N/A

Planning scenario	Drought	Very dry	Dry	Average	Wet
MacKenzie River – reach 2					
Potential environmental watering – tier 1 (high priorities)	• Winter/spring low flow (at 2 ML/day) • Winter/spring fresh (one fresh for two days) • Summer/autumn low flow (at 2 ML/day) • Summer/autumn fresh (one fresh at 5 ML/day for four to seven days)			• Winter/spring low flow (at 27 ML/day) • Winter/spring freshes (three freshes for five days each) • Summer/autumn low flow (at 10 ML/day) • Summer/autumn freshes (three freshes at 50 ML/day)	• Winter/spring low flow (at 27 ML/day) • Winter/spring freshes (five freshes for seven days each) • Summer/autumn low flow (at 10 ML/day) • Summer/autumn freshes (three freshes at 50 ML/day)
Potential environmental watering – tier 2 (additional priorities)	• Winter/spring low flow (at 10 ML/day) • Summer/autumn low flow (at 10 ML/day) • Summer/autumn freshes (three freshes at 5 ML/day for four to seven days)				
MacKenzie River – reach 3					
Potential environmental watering – tier 1 (high priorities)	• N/A			• Winter/spring low flow (at 5 ML/day) • Winter/spring freshes (three freshes) • Summer/autumn low flow (at 5 ML/day) • Summer/autumn freshes (three freshes)	• Winter/spring low flow (at 10 ML/day) • Winter/spring freshes (two freshes) • Summer/autumn low flow (at 10 ML/day) • Summer/autumn freshes (four freshes)
Potential environmental watering – tier 2 (additional priorities)	• Winter/spring low flow (at 2 ML/day) • Summer/autumn low flow (at 2 ML/day)			• Winter/spring freshes (five freshes) • Summer/autumn freshes (four freshes)	• N/A

Planning scenario	Drought	Very dry	Dry	Average	Wet
Upper Burnt Creek					
Potential environmental watering – tier 1 (high priorities)	• Year-round low flow (partial duration achieved) • Winter/spring freshes (two freshes at 15 ML/day) • Summer/autumn fresh (one fresh at 15 ML/day)			• Year-round low flow • Winter/ spring freshes (three freshes at varying magnitudes) • Summer/ autumn freshes (two freshes at 20 ML/day)	• Year-round low flow • Winter/ spring freshes (five freshes at a minimum of 35 ML/day) • Summer/ autumn freshes (three freshes at 30 ML/day)
Potential environmental watering – tier 2 (additional priorities)	• Year-round low flow (fully achieved) • Winter/spring freshes (tier 1 freshes at 55 ML/day) • Summer/autumn fresh (tier 1 fresh at 30 ML/day)			• Winter/ spring freshes (tier 1 freshes at 55 ML/day) • Summer/ autumn freshes (three freshes at 30 ML/day)	• Winter/ spring freshes (tier 1 freshes at 55 ML/day)
Lower Burnt Creek					
Potential environmental watering – tier 1 (high priorities)	• N/A			• Freshes (two freshes)	• Freshes (four freshes)
Potential environmental watering – tier 2 (additional priorities)	• N/A			• Freshes (four freshes)	• Bankfull fresh (one fresh)
Bungalally Creek					
Potential environmental watering – tier 1 (high priorities)	• N/A			• Bankfull fresh	• Bankfull fresh

Planning scenario	Drought	Very dry	Dry	Average	Wet
Lower Mount William Creek[3]					
Potential environmental watering – tier 1 (high priorities)	• Winter/spring freshes (three to seven freshes of 30-40 ML/day for two to seven days during July to November) • Summer/autumn freshes (three freshes of 30-50 ML/day for two to seven days during December to May)		• Winter/spring freshes (three to seven freshes of 30-40 ML/day for two to seven days during July to November) • Summer/autumn freshes (three freshes of 30-50 ML/day for two to seven days during December to May)	• Winter/spring freshes (three to seven freshes of 30-40 ML/day for two to seven days during July to November) • Winter/spring fresh(es) (one to five freshes of 100 ML/day for three to seven days during June to November) • Summer/autumn freshes (three freshes of 30-40 ML/day for two to seven days during December to May)	• Winter/spring freshes (three to seven freshes of 30-40 ML/day for two to seven days during July to November) • Winter/spring fresh(es) (one to five freshes of 100 ML/day for three to seven days during June to November) • Summer/autumn freshes (three to six freshes of 30-40 ML/day for two to seven days during December to May)
Potential environmental watering – tier 2 (additional priorities)	• N/A		• N/A	• N/A	• N/A
Upper Mount William Creek					
Potential environmental watering – tier 1 (high priorities)	• Top-ups				
Mt Cole Creek					
Potential environmental watering – tier 1 (high priorities)	• N/A				
Potential environmental watering – tier 2 (additional priorities)	• Year-round, pipeline-supplied drought refuge top-ups			• N/A	

Planning scenario	Drought	Very dry	Dry	Average	Wet
Dock Lake					
Potential environmental watering – tier 1 (high priorities)	• N/A				
Potential environmental watering – tier 2 (additional priorities)	• N/A				• Winter/ spring partial fill
Ranch Billabong					
Potential environmental watering – tier 1 (high priorities)	• Top-ups (winter/spring and summer/autumn)			• N/A	• N/A
Possible volume of water for the environment required to achieve objectives[4]	• 13,692 ML (tier 1) • 684 ML (tier 2)	• 12,542 ML (tier 1) • 627 ML (tier 2)	• 16,582 ML (tier 1) • 829 ML (tier 2)	• 20,370 ML (tier 1) • 1,018 ML (tier 2)	• 18,895 ML (tier 1) • 944 ML (tier 2)
Priority carryover requirements for 2026-27	• The VEWH will work with the Wimmera and Glenelg Hopkins CMAs to refine a carryover target for 2026-27 once winter and spring storage inflows are known and the potential resource outlook for the following year is clear.				

1 Volumes represent the available water for the Wimmera and Glenelg systems under the shared *Wimmera and Glenelg Rivers Environmental Entitlement 2010* and are the total of carryover and estimated new allocations.

2 Volumes represent the available water for the Wimmera system held by the Commonwealth Environmental Water Holder under the *Bulk Entitlement (Wimmera and Glenelg Rivers – GWMWater) Order 2010* and are the total of carryover and estimated new allocations.

3 All deliveries targeting Wimmera River reach 4 are expected to provide a flow that meets the requirements of this reach. Demands for water for the environment for these actions are zero as a result.

4 Models used to estimate the possible volume of water for the environment required to achieve objectives are insufficiently specific about the required volume in the wetter planning scenarios, and they likely overstate the potential demands. Demands in wet conditions would likely be much lower than this, as the natural flow would meet the requirements for most actions.

4.4 Wimmera-Mallee wetlands system

Waterway managers – Mallee, North Central and Wimmera catchment management authorities

Storage manager – Grampians Wimmera Mallee Water

Environmental water holder – Victorian Environmental Water Holder

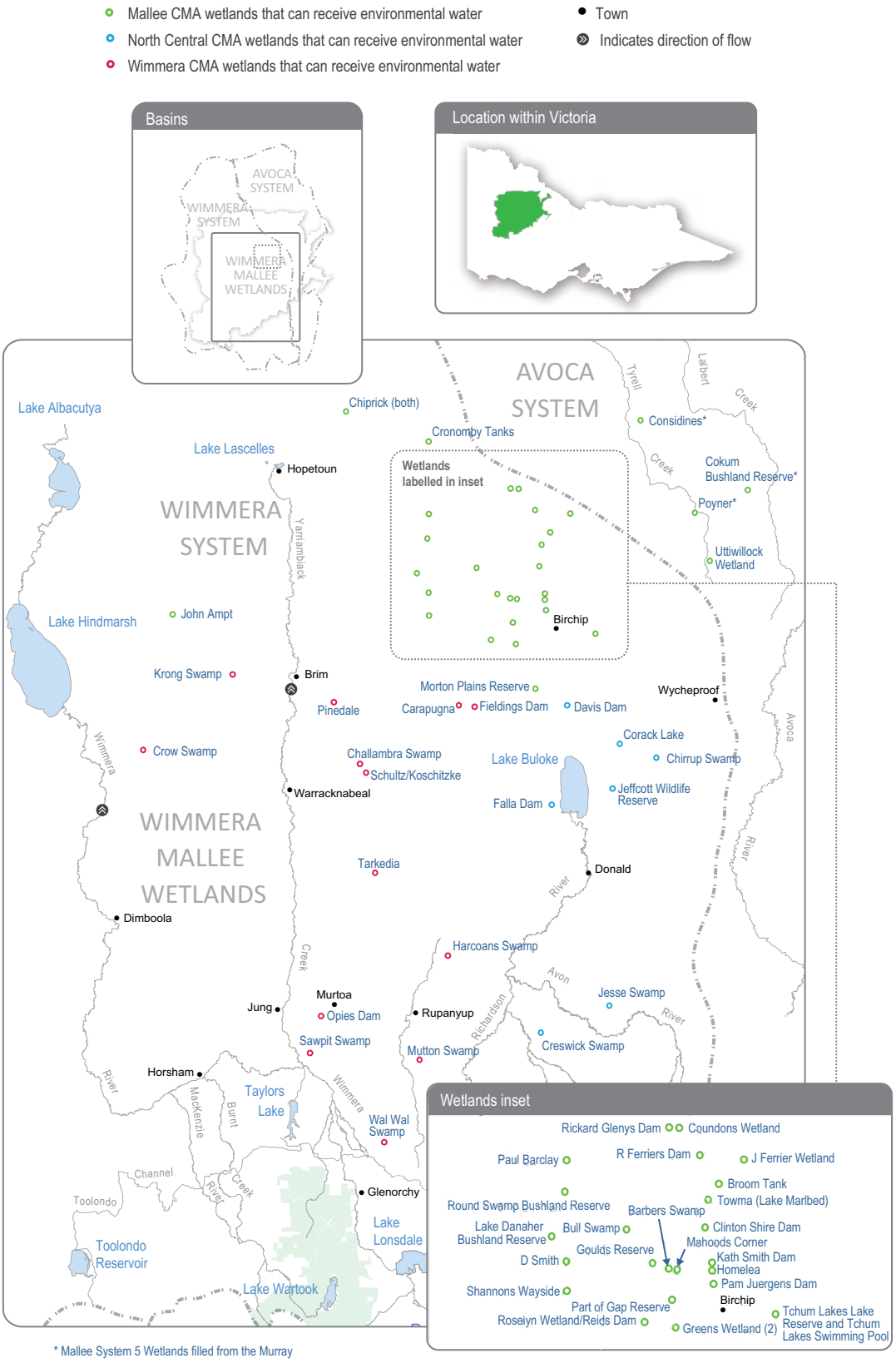
System overview

The Wimmera-Mallee wetlands include 52 sites on public and private land spread across north-west Victoria (Figure 4.4.1). From the early 20th century until the construction of the Wimmera-Mallee Pipeline Project (WMPP) in 2010, the deeper areas of these wetlands received water most years from the open channels associated with the Wimmera Mallee Domestic and Stock Channel System.

The WMPP replaced stock and domestic supply dams with tanks and the open-channel distribution system with pipelines to improve water efficiency. A portion of the water savings from the WMPP was converted to an environmental entitlement to improve the condition of the area's flow-stressed rivers, creeks and wetlands; the rest was used to create regional development opportunities and boost supply reliability for other users. The WMPP reduced the amount of open-water habitat in predominantly agricultural areas formerly supplied by the open-channel system, so a separate 1,000 ML environmental entitlement was created to water some of the wetlands that were previously supplied through the channel system. Fifty-two priority wetlands can receive water from this environmental entitlement.

Water for the environment can only be delivered to the wetlands when there is sufficient capacity in the Wimmera-Mallee Pipeline system, which can be affected by demand from other pipeline customers. The North Central, Mallee and Wimmera CMAs work closely with Grampians Wimmera Mallee Water and land managers (including Parks Victoria, the Department of Energy, Environment and Climate Action and private landowners) to take account of pipeline capacity constraints when ordering environmental deliveries to wetlands.

Figure 4.4.1 Wimmera-Mallee wetlands system



Environmental values

There are many wetland types in the Wimmera-Mallee wetlands system, including freshwater meadows, open freshwater lakes and freshwater marshes. This diversity provides various wetland habitats for plants and animals across the Wimmera-Mallee region. The wetlands also vary in size and support different vegetation communities. Some support native waterbird populations, including brolgas, egrets, blue-billed ducks, freckled ducks, Australian painted snipes and glossy ibis. The vulnerable growling grass frog, turtles and many other native animals may use the wetlands as drought refuges and drinking holes. Rare and vulnerable vegetation species (such as spiny lignum, ridged water-milfoil, chariot wheels, cane grass and reintroduced marbled marshwort) are also present in some wetlands.

Several water-dependent animal species have been recorded at Mallee CMA pipeline sites, including the listed freshwater catfish, Murray River turtle, hardhead and eastern great egret. Several listed terrestrial animal species have also been recorded using the wetlands as drought refuges and drinking holes, including the indirectly water-dependent regent parrot, carpet python and vulnerable growling grass frog.

In 2024, the Wimmera CMA and the Victorian Fisheries Association released 50 southern purple-spotted gudgeon and 50 olive perchlet into Fieldings and Tarkedia dams and Wal Wal, Mutton and Harcoans swamps as part of a surrogacy program. These fish species are threatened in the Murray-Darling Basin.

Marbled marshwort has been reintroduced at Davis Dam, Creswick Swamp, Jesse Swamp, Cherrip Swamp and Jeffcott Swamp by the North Central CMA. Also, Falla Dam is being used as a reserve site for critically endangered Murray hardyhead as part of the ***National Recovery Plan For The Murray Hardyhead***. Over 300 Murray hardyhead were introduced in November 2023 and November 2024 to restock populations at sites outside the Wimmera-Mallee wetlands system that have been harmed by drought and other disturbances and to reduce the risk of extinction by improving populations.

Environmental objectives in the Wimmera-Mallee wetlands system

	A1 – Maintain frog populations and provide suitable habitat
	**B1** – Maintain populations of waterbirds and other native birds by providing resting, feeding and breeding habitat
	F1 – Maintain native fish populations
	**T1** – Maintain turtle populations
	**TA1** – Provide watering holes for native animals and terrestrial birds across the landscape
	**V1** – Maintain the condition of aquatic and fringing plants, including lignum, river red gum and black box communities and improve the diversity of wetland vegetation communities

Traditional Owner cultural values and uses

The broad geographic area that includes the Wimmera-Mallee wetlands has a longstanding cultural connection for the Traditional Owners of the region, including groups represented by the Barengi Gadjin Land Council Aboriginal Corporation (BGLC) and the Dja Dja Wurrung Clans Aboriginal Corporation (DJAARA), and to Barapa Barapa Traditional Owners. Some sites have artefacts and scar trees recorded in or adjacent to them, and further cultural surveys could better inform the management of water for the environment at those sites.

BGLC is the Registered Aboriginal Party (RAP) for a significant land area of the Wimmera-Mallee wetlands. The council represents the Wotjobaluk, Jaadwa, Jadawadjali, Wergaia and Jupagalk peoples.

In May 2022, BGLC and the North Central CMA undertook a cultural values assessment at Creswick Swamp. Cultural values identified at the site include river red gums and eastern grey kangaroos.

In early 2024, BGLC and the Wimmera, North Central and Mallee CMAs attended a Wimmera-Mallee wetlands community field day. They visited six sites along the Wimmera-Mallee Pipeline, and BGLC communicated important cultural values and how environmental water can help protect those values.

In recent years, BGLC Water Officers and the Wimmera CMA have monitored Sawpit Swamp Wildlife Reserve, Wal Wal Swamp Wildlife Reserve, Carapugna (Watchem Bushland Reserve) and Mutton Swamp Wildlife Reserve, helping to understand environmental flow deliveries and values at the sites. BGLC also attended Fieldings Dam to release fish and plant aquatic vegetation to improve habitat. This was a joint effort between the BGLC, the Wimmera CMA, Yarrilinks Landcare and the Victorian Fisheries Authority.

In 2024-25, the Mallee CMA and BGLC attended site visits held at Goyura, Ranch Lagoon and Yallamjip-Walpeup Wetland and discussed possible *Water is Life* trial sites, environmental watering opportunities and aspirations and projects to help reconnect and heal Country. In October, the Mallee CMA and BGLC met at Ranch Lagoon to discuss planning for environmental water deliveries in 2025-26. In December 2024, the Mallee CMA and BGLC visited Lake Danaher and Greens Wetland to discuss the cultural values and uses of these sites, with BGLC noting the importance of revegetation and traditional plants, bush food and medical plants at the Wimmera-Mallee wetlands. They expressed interest in encouraging the growth of ice crystal plant and black box, as well as protecting turtles from pest species, including foxes and cats. The importance of cultural burning to allow plants and trees to germinate was also discussed.

A draft list of proposed watering sites for 2025-26 was provided to BGLC at an Aboriginal Reference Group meeting in February 2025 as part of feedback from earlier discussions in October and December. BGLC staff were happy with the sites planned to receive water and were interested in expanding the existing sites to include Goyura Wetland, where they can conduct plant and animal protection works.

BGLC has discussed with the CMAs the significance of the wetlands and their aspiration to undertake work at these sites in future. They provided the following statement when discussing environmental watering.

> "The Wimmera-Mallee is a living cultural landscape, and there is a lack of recorded data regarding the cultural values over many sections of the Wimmera-Mallee Pipeline. Several highly significant places are outlined through our Country Plan, but like all places across our Country, the rivers, creeks, lakes, wetlands and swamps and all other landscape features in this area are of high cultural significance. We wish to care for Country again through our traditional land management practices and revive and share the ancient narrative of this area. Mapping the cultural values of places along the Wimmera-Mallee Pipeline will be essential in contributing to integrated catchment management.
>
> "We are unable to identify places of particular cultural values and uses confidently until Aboriginal Water Assessment/Cultural Heritage Surveys are systematically undertaken across Wimmera-Mallee Pipeline sites. All the swamps, wetlands and soaks of this area are of high cultural significance as they are linked to Traditional trading routes that extend in all directions. It is essential that all of these places are managed correctly and water quality and biodiversity are improved."

DJAARA is the RAP for the area containing Jeffcott Swamp and Jesse Swamp. DJAARA provided the following statement for the 2025-26 seasonal watering proposals and plan.

> "DJAARA have a unique opportunity, as the first owners of the land and water that includes the Wimmera-Mallee Pipeline wetlands, to apply ancient Djaara Cultural principles and management practices to the current water management context.
>
> "Empowering DJAARA to manage water in the catchment enables DJAARA to provide overarching guidance to holistically manage water to meet environmental, social and economic values.
>
> "Cultural values do not sit as another competing value and use of the water. Rather, Cultural values provide the lens for all values to be viewed through and met. If we are enhancing Cultural values, uses and practices in the Wimmera-Mallee Pipeline wetlands, we are enabling environmental, social and economic values to be supported.
>
> "In November 2023, DJAARA launched its water strategy ***Dhelkunyangu Gatjin: Working together to heal water: Djaara Gatjin Strategy***, setting a *baring* (pathway) for DJAARA to become the environmental water manager on Djaara Country and a *baring* for Djaara Lore to inform water management decisions. This transition is being progressed by working in partnership with authorities and the community to manage water for a healthy, sustainable future.
>
> "Through implementation of the Dhelkunyangu Gatjin Strategy, facilitated by the Wanggal Partners Group, which has representation by the North Central CMA and water management agencies operating on Djaara *Djandak* (Country), the agencies continue to work to support DJAARA's increased engagement in planning and delivering environmental water, including identifying opportunities for DJAARA to play a greater role in its management and administration and the transfer of environmental water entitlements to DJAARA."

DJAARA have expressed that the resources allocated to managing environmental water on *Djandak* do not sufficiently allow for appropriate engagement with Djaara, for them to meaningfully articulate Cultural values and the Djaara Cultural lens, for the establishment of watering objectives to guide environmental water management, nor for the review of the six seasonal watering proposals on *Djandak*. For the development of the 2025-26 seasonal watering proposals, DJAARA and the North Central CMA agreed to allocate DJAARA's resource allowance to developing a joint management approach that would embed DJAARA in the development process, trialling the approach for Birchs Creek and Coliban River.

Increasing the involvement of Traditional Owners in planning and managing environmental flows and progressing opportunities towards self-determination in the environmental watering program is a core commitment of the VEWH and its program partners. This is reinforced by legislation and policy commitments, including the *Water Act 1989*, the ***Victorian Aboriginal Affairs Framework***, the 2016 ***Water for Victoria***, the 2022 ***Water is Life: Traditional Owner Access to Water Roadmap*** and, in some cases, agreements under the *Traditional Owner Settlement Act 2010*.

Social, recreational and economic values and uses

The recreational and economic values of wetlands and dams are extremely important to the Wimmera-Mallee Pipeline region community.

While social, recreational and economic drivers are not the deciding factors when selecting and prioritising sites to receive water, community support can be important for determining the success of a watering event. Community feedback highlights the importance of these landscapes to the community and the additional benefits of delivering environmental water.

Face-to-face, online communication and community surveys indicate a high level of use of local wetlands and creeks, with a greater connection when water is present. The community regularly enjoys recreational activities at the wetlands proposed to receive water for the environment in 2025-26. Commonly mentioned activities associated with watering include on-water activities, birdwatching, picnicking, photography and nature walks. At some larger sites, people also mentioned boating, kayaking, fishing, swimming and camping, and during site visits, Wimmera CMA staff saw people fishing, yabbying, camping and on day visits.

Landowners also said that after watering, there were more waterbirds, frogs, goannas and snakes at the watered sites.

In planning the potential environmental watering actions in **Table 4.4.1**, the Mallee, North Central and Wimmera CMAs considered how environmental flows could support values and uses, including:

- water-based recreation (such as fishing, swimming and yabbying)
- riverside recreation and amenity (such as birdwatching, duck and quail hunting, photography, camping, picnicking and walking)
- community events and tourism (such as orienteering and citizen science, including collecting data about bird species and abundance, frog species and microbat recordings).

Scope of environmental watering

The term 'environmental watering' refers to the active delivery of held environmental water to support particular environmental objectives by altering the flow in a river or the water level in a wetland. While other terms are sometimes used to describe the delivery of environmental water, 'environmental watering' is deliberately used here and in seasonal watering statements to ensure consistency in the legal instruments that authorise the use of water for the environment in Victoria.

Table 4.4.1 describes the potential environmental watering actions in 2025-26, their expected watering effects — the intended physical or biological effects of the watering action — and the longer-term environmental objectives they support. Each environmental objective relies on one or more potential environmental watering actions and their associated physical or biological effects.

Table 4.4.1 Wimmera-Mallee wetlands system potential environmental watering actions, expected watering effects and environmental objectives

Potential environmental watering action	Expected watering effects	Environmental objectives
Mallee wetlands		
Barbers Swamp **Broom Tank** **Bull Swamp** **Chiprick Bushland Reserve** **Clinton Shire Dam** **Cokum Bushland Reserve** **Considines** **Coundons Wetland** **Cronomby Tanks** **D Smith Wetland** **Goulds Reserve** **Greens Wetland** **Homelea**	• Stimulate the growth of aquatic and fringing vegetation and allow the plants, including cane grass, ridged water-milfoil, black box and spiny lignum, to complete their life cycles • Provide a permanent water source for refuge and to support feeding and breeding opportunities for frogs, turtles, waterbirds and terrestrial species • Increase habitat connectivity for animal species across an otherwise dry landscape	A1  B1 F1  T1  TA1  V1

Potential environmental watering action	Expected watering effects	Environmental objectives
J Ferrier Wetland	• Stimulate the growth of aquatic and fringing vegetation and allow the plants, including cane grass, ridged water-milfoil, black box and spiny lignum, to complete their life cycles • Provide a permanent water source for refuge and to support feeding and breeding opportunities for frogs, turtles, waterbirds and terrestrial species • Increase habitat connectivity for animal species across an otherwise dry landscape	A1  B1 F1  T1  TA1  V1
John Ampt (House Dam)		
Kath Smith Dam		
Lake Danaher Bushland Reserve		
Mahoods Corner		
Morton Plains Reserve		
Pam Juergens Dam		
Part of Gap Reserve (Stephen Smith Dam)		
Paul Barclay		
Poyner		
R Ferriers Dam		
Rickard Glenys Dam		
Round Swamp Bushland Reserve (Marlbed Lake Swamp/Newer Swamp)		
Roselyn Wetland/ Reids Dam		
Shannons Wayside		
Tchum Lake – dam (Tcham Lakes Lake Reserve)		
Tchum Lake – Wetland (Tcham Lakes Lake Reserve)		
Towma (Lake Marlbed)		
Uttiwillock Wetland		

Potential environmental watering action	Expected watering effects	Environmental objectives
North-central wetlands		
Cherrip Swamp **Corack Lake** **Creswick Swamp** **Davis Dam** **Jeffcott Wildlife Reserve** **Jesse Swamp**	• Provide a permanent water source for refuge and to support feeding and breeding opportunities for frogs, waterbirds and turtles • Maintain varying depths of water to support aquatic and fringing plants' life cycles • Maintain varying depths of water to support a variety of feeding habitats for waterbirds	 A1  B1  T1  TA1  V1
Falla Dam	• Maintain the water depth and submerged vegetation in a condition that can support translocated Murray hardyhead	F1  V1
Wimmera wetlands		
Carapugna (Watchem Bushland Reserve) **Challambra Swamp** **Crow Swamp** **Fieldings Dam** **Harcoans Swamp (Burrereo Bushland Reserve)** **Krong Swamp** **Mutton Swamp** **Opie's Dam** **Pinedale** **Sawpit Swamp** **Schultz/Koschitzke** **Tarkedia Dam** **Wal Wal Swamp**	• Provide a permanent water source for refuge and to support feeding and breeding opportunities for frogs, turtles, waterbirds and terrestrial species • Stimulate the growth of aquatic and fringing vegetation and allow the plants, including chariot wheels, sneezeweed, ridged water-milfoil and spiny lignum, to complete their life cycles	A1  B1  T1  V1
Fieldings Dam, Harcoans Swamp (Burrereo Bushland Reserve), Mutton Swamp, Opie's Dam, Tarkedia Dam, Wal Wal Swamp	• Maintain/improve habitat for translocated southern purple-spotted gudgeon and blackfish and to support increased abundance of fish	F1  V1

Scenario planning

Table 4.4.2 outlines potential environmental watering and expected water use in a range of planning scenarios.

Rainfall in the Wimmera-Mallee during 2024-25 was well below the long-term average, with no allocation water received. This meant deliveries of water to sites were wholly reliant on the use of carryover. Wetlands that dropped below target levels in summer 2024-25 were topped up in autumn 2025. This ensured that most Wimmera-Mallee wetlands would be able to start 2025-26 with moderate water levels.

The wetlands proposed to be watered in each planning scenario in 2025-26 were determined according to the following principles. In drought conditions, the highest priority is to maintain permanent water in the deeper sections of the wetlands to provide drought refuge for waterbirds, frogs, turtles and terrestrial animals and to support the growth and life cycles of wetland plants. In wetter planning scenarios, water for the environment may be delivered, depending on the pipeline system's capacity, to water larger areas of a wetland. Large rainfall events and catchment inflows partially or entirely fill some wetlands in the average and wet planning scenarios, and water for the environment may be used in those cases to top up, fill or overtop wetlands to improve fringing wetland plant communities and provide additional habitat for waterbirds, frogs and turtles.

Barbers Swamp, Cokum Bushland Reserve, Roselyn Wetland/Reids Dam, Round Swamp Bushland Reserve (Marlbed Lake Swamp/Newer Swamp), Towma (Lake Marlbed) and Uttiwillock Wetland are all expected to receive environmental water in all planning scenarios, while part of Gap Reserve and Shannons Wayside will receive water in the dry, average and wet planning scenarios.

Cronomby Tanks and Falla Dam are being managed to support stocked threatened fish species, freshwater catfish and endangered Murray hardyhead, respectively. Therefore, they must be filled or topped up annually in all planning scenarios. The proposed water regime at Falla Dam in particular aims to maintain a permanent body of water with adequate salinity levels and submerged vegetation (ruppia) to provide cover and breeding habitat for the endangered Murray hardyhead. Fieldings, Tarkedia, Opie's, Wal Wal, Mutton and Harcoans wetlands are also being managed to support recent translocations of populations of southern purple-spotted gudgeon and blackfish.

Twenty-eight other wetlands are also likely to be watered in all planning scenarios to achieve the objectives for those sites and to maintain a range of wetland habitats across the region. Kath Smith Dam, Sawpit Swamp and Harcoans Swamp held water and remained wet after receiving sufficient inflows over the last few years, with no deliveries to Kath Smith Dam and Sawpit Swamp over 2024-25 to allow them to draw down.

Broom Tank, Chiprick Bushland Reserve, Coundons Wetland, Homelea, Kath Smith Dam, Part of Gap Reserve, Shannons Wayside and Tchum Lake – Dam (Tcham Lakes Lake Reserve) will potentially be topped up in dry, average and wet conditions but are not planned for watering in the drought planning scenario because they generally dry up quickly in very hot and dry conditions and are not effective drought refuges. Krong Swamp is also a poor drought refuge and will only potentially be watered in wet conditions.

If there are high environmental water allocations, the moderate water levels in many wetlands at the start of the year may provide opportunities to overtop some of the Wimmera-Mallee wetlands to improve the condition of surrounding wetland vegetation communities and provide additional feeding and breeding opportunities for frogs and possibly waterbirds.

Overtopping flows may be provided at six wetlands in all planning scenarios to consolidate the environmental benefits of potential wet conditions. If sufficient environmental water is available, additional wetlands will be overtopped in the dry, average and wet (11 further sites), average and wet (three further sites) and wet planning scenarios (two further sites).

Allocations to the environmental entitlement that supplies the wetlands in the Wimmera-Mallee wetland system are highly unreliable, averaging just 381 ML a year over the life of the entitlement. The ability to carry over water from one year to another allows waterway managers and the VEWH to manage the system in dry periods effectively. High allocations in wet and average years are needed to support watering actions for multiple years when dry conditions return, as observed in 2024-25, with no new allocation to the entitlement. The forecast carryover volume at the end of 2024-25 will help meet expected demands across the Wimmera-Mallee wetlands for at least the next two years in all planning scenarios. The North Central, Mallee and Wimmera CMAs and the VEWH will monitor climatic conditions and seasonal allocation outlooks during 2025-26 to inform a carryover target in the Wimmera-Mallee wetland system for 2026-27.

Table 4.4.2 Wimmera-Mallee wetlands system environmental watering planning scenarios

Planning scenario	Drought	Dry	Average	Wet
Expected availability of water for the environment	• 584 ML	• 584 ML	• 834 ML	• 1,584 ML
Mallee wetlands				
Potential environmental watering – tier 1 (high priorities)	• Barbers Swamp • Bull Swamp* • Clinton Shire Dam* • Cokum Bushland Reserve • Considines • Cronomby Tanks • D Smith Wetland • Greens Wetland* • J Ferrier Wetland • John Ampt (House Dam) • Lake Danaher Bushland Reserve • Mahoods Corner • Morton Plains Reserve • Pam Juergens Dam • Paul Barclay • Poyner • R Ferriers Dam • Rickard Glenys Dam	• Barbers Swamp • Broom Tank • Bull Swamp* • Chiprick Bushland Reserve* • Clinton Shire Dam* • Cokum Bushland Reserve • Considines • Coundons Wetland* • Cronomby Tanks • D Smith Wetland • Greens Wetland* • Homelea • J Ferrier Wetland • John Ampt (House Dam) • Kath Smith Dam • Lake Danaher Bushland Reserve • Mahoods Corner • Morton Plains Reserve	• Barbers Swamp • Broom Tank • Bull Swamp* • Chiprick Bushland Reserve* • Clinton Shire Dam* • Cokum Bushland Reserve • Considines • Coundons Wetland* • Cronomby Tanks • D Smith Wetland • Goulds Reserve • Greens Wetland* • Homelea • J Ferrier Wetland • John Ampt (House Dam) • Kath Smith Dam • Lake Danaher Bushland Reserve • Mahoods Corner • Morton Plains Reserve	• Barbers Swamp • Broom Tank • Bull Swamp* • Chiprick Bushland Reserve* • Clinton Shire Dam* • Cokum Bushland Reserve • Considines • Coundons Wetland* • Cronomby Tanks • D Smith Wetland • Goulds Reserve • Greens Wetland* • Homelea • J Ferrier Wetland • John Ampt (House Dam) • Kath Smith Dam • Lake Danaher Bushland Reserve • Mahoods Corner • Morton Plains Reserve

Planning scenario	Drought	Dry	Average	Wet
(continued) **Potential environmental watering – tier 1 (high priorities)**	• Round Swamp Bushland Reserve (Marlbed Lake Swamp/Newer Swamp) • Roselyn Wetland/Reids Dam* • Towma (Lake Marlbed) • Uttiwillock Wetland*	• Pam Juergens Dam • Part of Gap Reserve (Stephen Smith Dam)* • Paul Barclay • Poyner • R Ferriers Dam • Rickard Glenys Dam • Round Swamp Bushland Reserve (Marlbed Lake Swamp/Newer Swamp) • Roselyn Wetland/Reids Dam* • Shannons Wayside • Tchum Lake – dam (Tcham Lakes Lake Reserve) • Towma (Lake Marlbed) • Uttiwillock Wetland*	• Pam Juergens Dam • Part of Gap Reserve (Stephen Smith Dam)* • Paul Barclay • Poyner • R Ferriers Dam • Rickard Glenys Dam • Round Swamp Bushland Reserve (Marlbed Lake Swamp/Newer Swamp) • Roselyn Wetland/Reids Dam* • Shannons Wayside • Tchum Lake – dam (Tcham Lakes Lake Reserve) • Tchum Lake – wetland (Tcham Lakes Lake Reserve) • Towma (Lake Marlbed) • Uttiwillock Wetland*	• Pam Juergens Dam • Part of Gap Reserve (Stephen Smith Dam)* • Paul Barclay • Poyner • R Ferriers Dam • Rickard Glenys Dam • Round Swamp Bushland Reserve (Marlbed Lake Swamp/Newer Swamp) • Roselyn Wetland/Reids Dam* • Shannons Wayside • Tchum Lake – dam (Tcham Lakes Lake Reserve) • Tchum Lake – wetland (Tcham Lakes Lake Reserve) • Towma (Lake Marlbed) • Uttiwillock Wetland*
North-central wetlands				
Potential environmental watering – tier 1 (high priorities)	• Cherrip Swamp • Corack Lake • Creswick Swamp • Davis Dam • Falla Dam • Jeffcott Wildlife Reserve • Jesse Swamp	• Cherrip Swamp* • Corack Lake* • Creswick Swamp • Davis Dam • Falla Dam • Jeffcott Wildlife Reserve • Jesse Swamp*	• Cherrip Swamp* • Corack Lake* • Creswick Swamp * • Davis Dam* • Falla Dam • Jeffcott Wildlife Reserve • Jesse Swamp*	• Cherrip Swamp* • Corack Lake* • Creswick Swamp* • Davis Dam* • Falla Dam • Jeffcott Wildlife Reserve • Jesse Swamp*

Planning scenario	Drought	Dry	Average	Wet
Wimmera wetlands				
Potential environmental watering – tier 1 (high priorities)	• Carapugna (Watchem Bushland Reserve)* • Challambra Swamp • Crow Swamp • Fieldings Dam • Harcoans Swamp (Burrereo Bushland Reserve) • Mutton Swamp • Opie's Dam • Pinedale • Schultz/ Koschitzke • Tarkedia Dam • Wal Wal Swamp	• Carapugna (Watchem Bushland Reserve)* • Challambra Swamp* • Crow Swamp* • Fieldings Dam • Harcoans Swamp (Burrereo Bushland Reserve) • Mutton Swamp* • Opie's Dam • Pinedale • Schultz/ Koschitzke • Tarkedia Dam • Wal Wal Swamp*	• Carapugna (Watchem Bushland Reserve)* • Challambra Swamp* • Crow Swamp* • Fieldings Dam • Harcoans Swamp (Burrereo Bushland Reserve)* • Mutton Swamp* • Opie's Dam • Pinedale* • Sawpit Swamp* • Schultz/ Koschitzke • Tarkedia Dam • Wal Wal Swamp*	• Carapugna (Watchem Bushland Reserve)* • Challambra Swamp* • Crow Swamp* • Fieldings Dam* • Harcoans Swamp (Burrereo Bushland Reserve)* • Krong Swamp* • Mutton Swamp* • Opie's Dam • Pinedale* • Sawpit Swamp* • Schultz/ Koschitzke • Tarkedia Dam • Wal Wal Swamp*
Possible volume of water for the environment required to achieve objectives	• 127 ML	• 165 ML	• 287 ML	• 392 ML
Priority carryover requirements for 2026-27	• The VEWH will work with CMAs to refine a carryover target for 2026-27 once winter and spring storage inflows are known and the potential resource outlook for the following year is clear.			

* Delivery to the site is expected to provide temporary, shallow inundation of at least part of the surrounding wetland or floodplain.