2026-2036







WIMMERA WATERWAY STRATEGY

IMPLEMENTATION PLAN

VICTORIA State Government Australia

Wimmera CMA



YARRIAMBIACK & BULOKE

IMPLEMENTATION PLAN

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Yarriambiack and Buloke local area - overview

About the local area

The Yarriambiack and Buloke local area extends north from the Barringgi Gadyin (Wimmera River) near the Gariwerd (Grampians National Park) to north of the Brim township. It covers the southern part of Yarriambiack Shire and a western portion of Buloke Shire with the main towns being Warracknabeal, Murtoa, Minyip, Rupanyup and Brim. Approximately 5,100 residents live in the local area which extends across more than 378,750 hectares, encompassing a large portion of the northern Wimmera plains. (42)

The main land use is dryland broadacre cropping (89%), with just over 10% of the area covered by native vegetation and waterways including Yarriambiack and Dunmunkle Creeks and scattered wetlands, see Figure 8. (30)

Rivers and streams

Yarriambiack Creek is the local area's main waterway, branching off the Barringgi Gadyin (Wimmera River) near Longerenong to flow 120 km north through Jung, Warracknabeal and Brim, before terminating outside of the Wimmera CMA boundary at Lake Corrong, east of Hopetoun.

Dunmunkle Creek departs from the Barringgi Gadyin (Wimmera River) east of Glenorchy and flows parallel to the Yarriambiack Creek through Rupanyup, extending north past Boolite.

Dunmunkle and Yarriambiack Creeks are distributaries of the Barringgi Gadyin (Wimmera River). They flow episodically with their main source of water coming from the Barringgi Gadyin (Wimmera River) during high flows and floods. They also drain narrow, localised catchments.

Wetlands

Wetlands scattered throughout the Yarriambiack and Buloke local area comprise of the eastern section of the Northern Wimmera Plains Wetlands grouping. This grouping includes wetlands dispersed through the predominantly dryland broadacre cropping landscape extending across the northern Wimmera to the South Australian border.

There are 76 wetlands recorded in the Yarriambiack and Buloke local area, with 13 (17%) located on public land. These are predominantly shallow seasonal freshwater wetlands with a small number of deeper more-permanent lakes including Lake Marma at Murtoa.

Eleven wetlands receive water for the environment from the Wimmera Mallee Pipeline to retain biodiversity values in their agricultural landscape. Water managers established arrangements for piping water to these wetlands following strong community advocacy when the Wimmera Mallee Domestic and Stock Channel System was replaced with the Wimmera Mallee Pipeline.

Recreational lakes and weir pools that receive piped water from a recreational water entitlement held by GWMWater include Lake Marma at Murtoa, Watchem Lake at Watchem and Yarriambiack Creek weir pools at Warracknabeal and Brim.



Yarriambiack Creek at Jung.

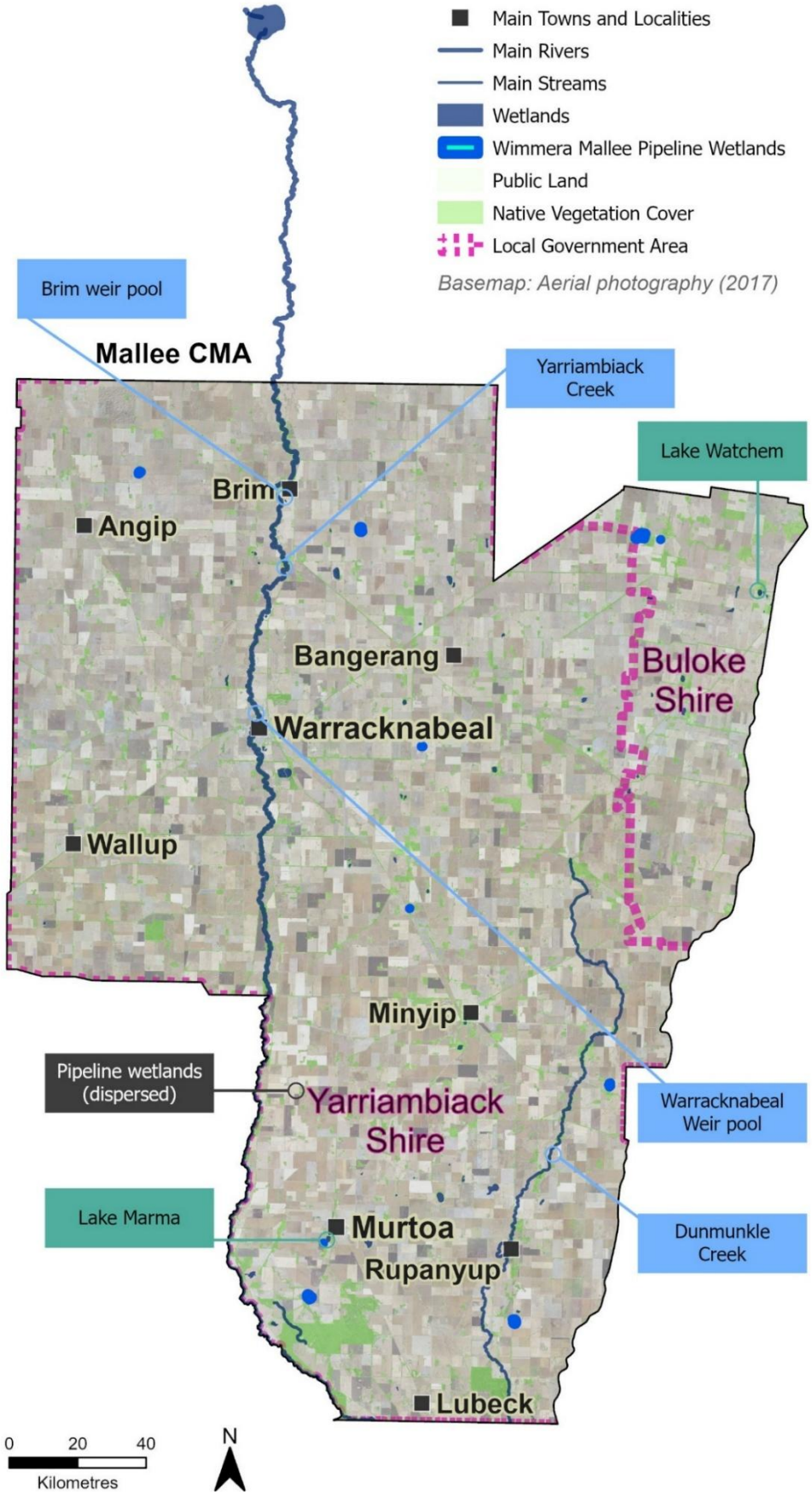


Figure 8. Yarriambiack and Buloke local area and some of its waterway assets. Information boxes are colour-coded by feature type: blue for rivers and streams and teal for wetlands.

Yarriambiack and Dunmunkle Creeks

Stream values

Environmental values

Yarriambiack and Dunmunkle Creeks are rare systems within south-east Australia from a hydrological perspective. Both creeks are distributaries, flowing away from the Barringgi Gadyin (Wimmera River) during high flows. (43)

Yarriambiack and Dunmunkle Creeks provide relatively connected native vegetation corridors between the Barringgi Gadyin (Wimmera River) in the south and the northern parts of the catchment into the Mallee. During floods, Yarriambiack Creek links Darlot Swamp, Barrabool Flora and Fauna Reserve and Lakes Coorong and Lascelles.

About 10% of remnant and restored native vegetation remains in the local area, highlighting the importance these vegetation corridors provide through the agricultural landscape. (30) It is likely that the creek lines will become increasingly important refuge areas under predicted climate change scenarios of reduced rainfall and runoff into waterways and increased bushfires and droughts.

The most prevalent native vegetation communities along both creeks are considered threatened in Victoria. Victorian Ecological Vegetation Classes in Yarriambiack Creek's riparian areas include Low Rises Woodlands and Plains Savannah, endangered in the Wimmera Bioregion; and Riverine Chenopod Woodlands, depleted in the Murray Mallee Bioregion. (43) Along Dunmunkle Creek, the Endangered Drainage Line Woodlands Ecological Vegetation Class is dominant south of Rupanyup and Endangered Riverine Chenopod Woodlands are dominant further north.

Studies have recorded threatened species in the riparian zone and catchment of both creeks, including species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and Victorian *Flora and Fauna Guarantee Act 1988*. Examples along the Dunmunkle Creek include the growling grass frog (*Litoria raniformis*), bush stone-curlew *(Burhinus grallarius*), turnip copperburr (*Sclerolaena napiformis*) and buloke tree (*Allocasuarina luehmannii)*. (44)

Endangered EPBC Act-listed species recorded in the Yarriambiack Creek catchment include slender darling-pea (*Swainsona murrayana*), winged pepper-cress (*Lepidium monoplocoides*), floodplain rustyhood (*Pterostylis cheraphila*), growling grass frog and Australasian bittern (*Botaurus poiciloptilus*). (43) Victorian endangered species include freshwater catfish (*Tandanus tandanus*) artificially stocked into Brim and Warracknabeal weir pools, silver perch (*Bidyanus bidyanus*) stocked at Brim weir pool and freckled duck (*Stictonetta naevosa*).

Cultural values

Connections between First Nations Peoples and Country are reflected in many ways including artefacts, scar trees and creation stories featured around waterways, remnant vegetation and associated wildlife of the Yarriambiack and Buloke local area. Protection and respectful management of cultural values associated with Yarriambiack and Buloke local area sites is a focus of ongoing collaboration.

The many scarred trees and middens located along the Yarriambiack and Dunmunkle Creeks, for example, demonstrate the significance of these specific riparian areas to First Nations Peoples. A Cultural Heritage Management Plan for a section of Dunmunkle Creek identified 105 cultural heritage sites including 82 scarred trees, 19 isolated artefact sites and 4 artefact scatter sites. (44)

Social and recreational values

Sections of Yarriambiack Creek and lakes in the region that regularly hold surface water are a focus for local communities. There is passionate interest in their condition and management.

GWMWater use recreational water allocations from the Wimmera Mallee Pipeline to maintain Yarriambiack Creek weir pools at Warracknabeal and Brim in the Wimmera CMA region and Beulah in the Mallee CMA region to the north. This water provides recreational opportunities for local communities, attracts visitors, improves amenity and provides environmental benefits.

Water-skiing, camping and fishing are popular at Warracknabeal and Brim weir pools.

Warracknabeal is the largest centre in Yarriambiack Shire and the weir pool is in the heart of the town and integral to its liveability. As part of Yarriambiack Creek, it connects residential, business and recreational areas and opportunities. It enhances passive recreational opportunities such as walking, sightseeing and angling, more vigorous activities such as water-skiing and is a foundation for visitor attractions and events.

Brim weir pool, north of Warracknabeal, plays a similar but slightly different role. This weir pool represents the primary tourist attraction for this tiny settlement as well as a fundamental recreation asset for the district's rural community. It is part of a Wimmera bush-camping, water-skiing and angling circuit and visitors from within Yarriambiack Shire, the Wimmera catchment and beyond, generate critical vibrancy for the local community. Brim community bases its major community events at the weir pool.

Dunmunkle Creek is like Yarriambiack Creek in that it only flows during times of high Barringgi Gadyin (Wimmera River) flows or flood. Works on the town's stormwater infrastructure helps maintain water in the billabong and regularly attracts caravanners, campers and picnickers. At Rupanyup, stormwater-fed Jack Emmett Billabong at Rupanyup Memorial Park on Dunmunkle Creek, is also a significant social amenity.

Economic values

The Brim and Warracknabeal weir pools provided an estimated economic contribution of $514,000 to the local economy in the 2020-21 financial year, according to the most recent socio-economic assessment. The Warracknabeal weir pool accounted for almost 70% of this total benefit. (45)

Tourism in the region continues to grow, supported in part by the Silo Art Trail, which is attracting more visitors to rural communities and their nearby water-based attractions. Facilities such as walking tracks, bridges, playgrounds, caravan parks, bathroom and laundry amenities and barbecue areas enhance the usability and appeal of the weir pools for both tourists and the local community.

Warracknabeal also hosts an annual Easter Festival and Y-Fest, major events that center many of their activities along the Yarriambiack Creek.

Stream condition

An Index of Stream Condition assessment using data from 2004 to 2010 found that Dunmunkle Creek's southern section was generally in moderate condition.

Yarriambiack Creek, assessed across three reaches, was recorded to have moderate stream condition, then declining to very poor condition as the creek travels north. (10)

Riparian vegetation

Yarriambiack and Dunmunkle Creeks support high-value riparian vegetation where the majority is fenced from livestock. However, areas still remain where intensive grazing is evident by a lack of regeneration and reduced shrub understorey. This reduces connectivity and diversity, as well as increasing the risk of bank erosion and weed invasion.

A 2018 assessment for the Yarriambiack Creek Waterway Action Plan found that, overall, the health of the flora in the Yarriambiack Creek reserve is excellent despite ongoing dry conditions. The report notes that dominant overstorey black box (*Eucalyptus largiflorens*) and river red gum trees (*Eucalytpus camaldulensis*) are very healthy. Assessors observed relatively uniform vegetation conditions throughout the catchment, with localised pockets of higher quality vegetation.

Hydrology

The Yarriambiack and Dunmunkle Creeks rarely flow as their main source of water is from the Barringgi Gadyin (Wimmera River) during high flows and floods. The creeks regularly experience long periods of no flow or low flow, with water only reaching the farthest extent under very high flow conditions which is predicted to occur less frequently under future climate scenarios.

Channel modifications

Construction of drainage channels and levee banks historically occurred along Yarriambiack Creek to fill adjacent dams for stock and domestic use.

There are substantial weirs at Jung, Warracknabeal and Brim which provide recreational opportunities and improved amenity for the local communities. (43)

Threats and drivers of change

Climate change and dry conditions

Climate change is a significant threat to the Yarriambiack and Buloke local area's waterways through increasing frequency and intensity of extreme weather. It is predicted that the region will experience more regular and extreme drought conditions which will threaten Yarriambiack Creek, Dunmunkle Creek and scattered wetland water flow and quality. (46) There will likely be greater reliance on piped water to support priority values.

Weeds and pest animals

Weeds are present along both creeks, as expected in a highly modified agricultural environment. Declared weeds on the Victorian noxious weeds list and Wimmera Regionally Controlled Weeds are present such as African boxthorn (*Lycium ferocissimum*), Bathurst burr (*Xanthium spinosum*), horehound (*Marrubium vulgare*), prickly pear (*Opuntia stricta*), spear thistle (*Cirsium vulgare*), common heliotrope (*Heliotropium europaeum*), wheel cactus (*Opuntia robusta*) and bridal creeper (*Asparagus asparagoides*). (44; 43)

Pest species present threats to native remnant vegetation along creeks. This includes weed incursions, while rabbits and kangaroos also place pressure on vegetation regeneration and growth.

Grazing by livestock

Overall, grazing intensity is relatively low as the area is dominated by broadacre cropping. (43)

A 2024 analysis of the level of protection of Wimmera rivers and streams from livestock access found that most (85%) of Yarriambiack Creek's length south of Warracknabeal is protected. Further north, between Warracknabeal and the Wimmera CMA's border, about half (53%) of the creek's length is protected.

A larger proportion of Dunmunkle Creek is unprotected. Fencing protects only 43% of the southern section of the creek, assessed as part of the analysis. (47)

Creek modification

Historically, Dunmunkle and Yarriambiack Creeks were modified via drainage channels and levee banks to distribute water for stock and domestic supply and isolated cropping activities. This use ceased since the completion of the Wimmera Mallee Pipeline in 2010. (35)

Smaller excavated dams and substantial weirs were also on the Yarriambiack Creek at Jung, Warracknabeal and Brim and also Beulah within the Mallee. (43)

Dunmunkle Creek remains substantially modified with levee banks lining the creek for much of its length and numerous redundant water regulation and impoundment structures present. (44)

These modifications have resulted in many locations, such as deep pools, losing their structural diversity. The community, keen to see a more natural water system, has echoed this concern, especially now the Dunmunkle Creek's role as a water distribution channel has ended.

Northern Wimmera Plains Wetlands (eastern section)

Wetland values

Environmental values

The Yarriambiack and Buloke local area's scattered wetlands provide important havens for native plants and animals in the largely agricultural landscape.

Lake Marma at Murtoa ranks among the highest of 15 piped recreational lakes across the broader Wimmera and Mallee region for environmental value.

Threatened species recorded at wetlands include species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and Victorian *Flora and Fauna Guarantee Act 1988*. Some of these species include the growling grass frog, Australasian bittern, chariot wheels (*Maireana cheelii*) and brown treecreeper (*Climacteris picumnus*), brown toadlet (*Pseudophryne bibronii),* southern toadlet *(Pseudophryne semimarmorata)*, brolga *(Antigone rubicunda),* musk duck *(Biziura lobata),* blue-billed duck *(Oxyura australis*), freckled duck *(Stictonetta naevosa*) and royal spoonbill *(Platalea regia).* (32)

Cultural values

Connections between First Nations Peoples and wetlands in the Yarriambiack and Buloke local area are evident throughout the landscape. The presence of scarred trees and artefact scatters around wetland margins demonstrate the cultural significance of these environments to First Nations Peoples.

Protecting and respectfully managing the cultural values of wetlands across the Yarriambiack area remains a key focus of ongoing collaboration.

Social and recreational values

There is passionate community interest in areas that regularly hold surface water.

Wimmera wetlands receiving a recreational water supply from the Wimmera Mallee Pipeline include Lake Marma at Murtoa and Watchem Lake. This water is provided by GWMWater to facilitate recreational opportunities for local communities, attract visitors and have environmental benefits.

Lake Marma generates a community heartbeat at Murtoa and promotes the settlement as a 'lakeside town' which reflects its importance. The town's 'Stick Shed' also draws tourists to the tranquil Lake Marma. The lake's foreshore, has considerable parkland amenities including a playground, jetty and entertainment facilities and is the base for major annual celebrations and events. These include highly patronised attractions such as New Year's Eve, Christmas and Murtoa's Big Weekend gatherings.

Lake Marma is part of everyday life in the Murtoa district, providing a wealth of recreational opportunities ranging from weekend water-skiing, fishing and picnicking, to everyday activities such as walking, birdwatching and family activities. Angling is popular year-round and the lake is regularly stocked with recreational fishing species, golden perch and exotic rainbow trout. (48)

Watchem Lake, at Watchem in the local area's north-east, is of similar community and social value. The artificial lake, which also receives recreational water allocations, provides important recreational amenity for district residents and visitors. Also the subject of fish stockings, Watchem Lake is part of a popular circuit for regional recreational water users such as anglers, water-skiers and other boating and picnicking enthusiasts. Community lake managers have stressed a profound need to protect and enhance the lake to maintain community health and liveability.

Economic values

Yarriambiack Shire had an estimated total of 34,000 participants in water-related activities (2020-21) between Lake Marma and Brim and Warracknabeal weir pools, with participants spending an estimated $640,000. (49)

Wetland condition

Pipeline wetlands

Index of Wetland Condition assessments indicate the condition of the eleven wetlands in the local area receiving water for the environment from the Wimmera Mallee Pipeline. Surveys completed in 2024 recorded Mutton Swamp and Carapugna Swamp as having 'Excellent' condition. Harcoans, Schultz-Koschitske, Pinedale, Tarkedia and Fielding's Dams and Sawpit and Krong Swamps, were in 'Good' condition. Opie's Dam and Challambra Swamp were 'Moderate' in their overall condition. (34)

Across assessments of physical form, hydrology, water properties and soils, the wetlands are rated mostly as 'excellent' across each category. Biota condition had the most variation between sites with Challambra Swamp and Opie's dam classed as being 'very poor', with four others assessed as 'poor.' Only Carapugna Swamp had an 'excellent' biota score, with Mutton Swamp being 'good.' The remaining wetlands having 'moderate' biota condition.

Hydrology

Climate change, dry years, modifications to the wetland basin and drainage and changes to paddock management have led to a decline in wetland-filling frequency if they are not part of environmental or recreational watering allocations.

Threats and drivers of change

Climate change and dry conditions

Future climate scenarios predict that the region will experience more regular and extreme drought conditions which threaten water flow to scattered wetlands. This will particularly impact wetlands with no access to water for the environment via the Wimmera Mallee Pipeline network. As of 2025, the pipeline supported 11 wetlands for environmental purposes in the Yarriambiack and Buloke local area.

Weeds and pest animals

Further threats to remnant vegetation in scattered wetlands and along creeks are from pest species. This includes weed incursions, while rabbits and kangaroos also place pressure on vegetation regeneration and growth.

Cropping and other modifications

Drainage alterations and cropping activities have altered water paths and drained some wetlands.

Most of the local area's 76 recorded wetlands are modified, with many covered by an agricultural crop, containing a dam, drain or levee. Only 16 wetlands (21%) were unmodified in a 2017 analysis by Wimmera CMA.

The risk of further wetlands being modified is likely to be low given the extent of existing modifications and stable land use in the area that has long been cropped.

Grazing by livestock

Grazing intensity is relatively low in the local area, with land use dominated by broadacre cropping.

Previous waterway strategy achievements

Key achievements from implementing the previous *Wimmera Waterway Strategy 2014-2022* in the Yarriambiack and Buloke local area include:

- Wimmera CMA and public and private land managers collaborated to enhance riparian vegetation along Yarriambiack and Dunmunkle creeks by fencing areas to manage stock grazing and controlling weeds and rabbits.
- Wimmera CMA developed Waterway Action Plans for Yarriambiack Creek (2018) and Dunmunkle Creek (2020). The plans provide detailed waterway condition assessments and a prioritised management action program for protecting and improving river health. The plans are key documents guiding development and implementation of the Regional Waterway Strategy.
- Wimmera CMA, together with the Victorian Environmental Water Holder, Parks Victoria, Barengi Gadjin Land Council and private landholders, improved the environmental condition of 13 wetlands receiving piped water for the environment, with 11 being in the Yarriambiack and Buloke local area. This included installing and upgrading infrastructure enabling efficient water delivery, delivering water for the environment in line with Seasonal Watering Plans and monitoring waterbirds, frogs and native vegetation including threatened species to inform future management regimes.
- Wimmera CMA and Yarriambiack Shire Council assessed the viability and then removed a sediment slug from a section of the Yarriambiack Creek to prevent impacts on the Warracknabeal weir pool.

Future Opportunities

Water for the Environment

The Wimmera Mallee pipeline enables water for the environment managers to pipe water directly to 13 wetlands in the north-eastern Wimmera CMA region, 11 being in the Yarriambiack local area. This is part of a network of 52 wetlands in the neighbouring Mallee and North Central CMA regions, providing refuge for native biodiversity.

Stakeholders consulted during the development of the Strategy expressed support for exploring the potential to provide water for the environment from the Wimmera Mallee Pipeline to drought refuge pools in Yarriambiack Creek. If possible, this would significantly enhance environmental values and the value of the creek as a wildlife corridor and drought refuge.

Dunmunkle Creek restoration

In 2018, Wimmera CMA completed a flood study of Dunmunkle Creek that included an assessment of the impacts of decommissioning the creek as a channel. [50] Through this process, the local community sought to decommission the channel's banks to minimise the impact of intermittent flooding along the creek's length and return the creek to as natural a state as possible.

GWMWater developed a plan for decommissioning and, where possible, filled in or removed banks and other structures. [51] Barriers to decommissioning prevented changes in some areas. For example, native vegetation clearing laws prevented some decommissioning of channel banks in the Brynterion State Forest due to well-established native vegetation occurring there.

There is a continued desire from the community and waterway managers to decommission these areas and restore the creek to a more natural waterway for both environmental and economic benefits.

Enhancing Whitton Swamp

Community members have expressed interest in exploring the potential to enhance Whitton Swamp south of Warracknabeal as a water-based community reserve.

The swamp has historically undergone major modifications when in use as a water-supply storage for Warracknabeal. Completion of the Wimmera Mallee Pipeline in 2010 removed its need as a water storage. Different sections of the swamp are managed by either GWMWater or the Victorian Department of Environment, Energy and Climate Action management.

The site is surrounded by agricultural land and a series of raised levee banks. Landscape modifications have changed overland water-flow paths and altered the frequency of swamp inundation.

Yarriambiack Shire Council has explored development and watering opportunities to transform the swamp into a water-based parkland reserve.

In 2025, being able to access artificial water supply appeared essential for any development.

Stakeholder and community feedback

Wimmera CMA invited stakeholders and community members to contribute to Strategy development. Stakeholders in the Yarriambiack and Buloke local area highlighted the following waterways as important:

- Yarriambiack Creek, including weir pools at the Warracknabeal and Brim townships
- Dunmunkle Creek
- Lake Marma
- Whitton Swamp
- Mutton Swamp
- Wetlands receiving water for the environment from the Wimmera Mallee Pipeline.

Stakeholders provided a wide range of suggestions to guide future waterway management across the local area. Key themes included:

- **Protecting and improving waterway values:** Stakeholders expressed strong support for initiatives that protect and enhance waterways for their benefits. Many recognised the importance of maintaining healthy waterways to support biodiversity, community wellbeing, recreation and regional resilience.
- **Supporting environmental watering and habitat connectivity:** Stakeholders supported continuing efforts to enhance Yarriambiack and Dunmunkle Creeks as important north-south biolink corridors and to provide water for the environment to wetlands supplied through the Wimmera Mallee Pipeline. There was also strong support for exploring opportunities to provide water for the environment to drought refuge pools within Yarriambiack Creek to help sustain biodiversity during dry periods.
- **Addressing water security and growing demand:** Stakeholders expressed concern that a drying climate and increasing water demand will continue to place pressure on available water resources. Some raised concerns about the potential allocation of pipeline water supplies to new users, particularly large industrial developments such as mineral sands mines, and the implications for environmental and community water needs.
- **Managing threats to waterways and riparian areas:** Participants identified stock grazing, invasive species, erosion and damage caused by recreational vehicles as ongoing threats to waterway health. Concerns were also raised about impacts associated with firearm use, duck hunting and illegal firewood collection in and around waterways and wetlands.
- **Managing risks associated with development:** Some stakeholders expressed concern about the proximity of developments, including mining and renewable energy projects, to waterways. Potential risks to water quality and environmental values were highlighted as important considerations for future planning and management.
- **Supporting recreational lake management:** Stakeholders noted that some recreational lakescould benefit from dedicated management plans that support recreational use while managing associated environmental impacts and protecting waterway values.
- **Improving flood and waterway management:** Flood mitigation was identified as an important issue, particularly along Dunmunkle and Yarriambiack Creeks. Stakeholders expressed differing views regarding the management of instream vegetation, with some concerned about reduced flood conveyance and others concerned about erosion caused by fast-moving floodwaters. Participants also highlighted the impacts of historical floodplain modifications on natural flow paths, wetland connectivity and cross-property drainage.
- **Restoring waterway connectivity where feasible:** Some stakeholders expressed a desire to restore flows to the Brynterion State Forest by reopening the Dunmunkle Creek channel. While support exists for improving hydrological connectivity, participants recognised that implementation is currently constrained by Victoria's Native Vegetation Management framework.

Priority areas for management

The Strategy identified the Yarriambiack and Buloke local area's priority areas for management:

- Yarriambiack Creek
- Weir pools at Warracknabeal and Brim
- Wetlands with high environmental value
- Wetlands with high social and economic value, including Lake Marma
- Wimmera Mallee pipeline wetlands

Together, these areas hold the highest ecological, cultural and recreational value and face the greatest management needs. Details of the prioritisation process are described in a supporting document to the Strategy.

Yarriambiack and Buloke local area - Implementation plan

The following tables outline management actions for the Yarriambiack Creek, Dunmunkle Creek and Northern Wimmera Plains wetlands, including wetlands watered from the Wimmera Mallee Pipeline.

These actions are intended to be implemented over the ten-year period from 2026 to 2036 to help achieve desired environmental, cultural, social and recreational outcomes for the Yarriambiack and Buloke local area.

Management actions are shaded green for high priority and orange for medium priority. Actions with no shading are low priority. Unless otherwise specified, actions are currently funded through the Environmental Contribution Levy and other funding sources until 2028. For the purposes of the Strategy, funding is assumed to continue at current levels through to 2036.

This Plan is a living document that will be updated over time to reflect changes in funding, resources and other factors influencing catchment condition and management.

Implementation plan - Yarriambiack Creek and Dunmunkle Creek

This Implementation Plan provides a coordinated framework to protect and enhance the ecological values of the Yarriambiack Creek and Dunmunkle Creek.

A key focus is enhancing riparian habitat, strengthening landscape connectivity and improving ecosystem resilience through targeted on-ground works, partnership programs and long-term stewardship. Actions will support the restoration and protection of native vegetation, improve habitat linkages along waterways, and build the capacity of landholders and communities to contribute to waterway health.

Management actions are grouped in this Plan according to management themes:

Management theme	Table number
Enhancing riparian habitat, landscape connectivity and resilience.	Table 28
Drought refuge area management.	Table 29
Supporting recreational access in balance with environmental and cultural values.	Table 30

Appendix 1 contains the logic framework outlining the medium-term outcomes, values, threats and management actions that underpin this Plan. The key values supported and threats addressed by the Plan are summarised below.

Key values supported by this implementation plan
High quality native vegetation in excellent health overall.
Threatened ecological vegetation communities in the riparian zone**.**
Threatened plants including slender darling-pea, winged pepper-cress and floodplain rustyhood.
Threatened animals including Australasian bittern and growling grass frog.
Contributes to landscape connectivity, with the creek providing a north-south corridor through an agricultural landscape.
High community values and stewardship, including active Landcare network and groups.

Key threats addressed by this implementation plan
Reduced flows from climate change, drought and altered water regimes.
Poor ground cover enabling erosion, contributing to sediment moving downstream, impacting on water quality and instream habitat.
Invasive plants and pest animals.
Habitat degradation, including overgrazing and recreation impacts.
Impacts of floods and bushfire.

Enhancing riparian habitat, landscape connectivity and resilience

Table 28. Management actions associated with maintaining or improving riparian areas.

Priority area	Medium-term outcomes (MO)	Contribution to the medium-term outcomes (What the management action seeks to influence to achieve the outcome).	Management action	Amount by 2036	Responsible parties (Lead organisations are **bold**).	Connection with other plans or strategies	Status
Yarriambiack Creek. Dunmunkle Creek.	**MO2.** Priority areas have improved management to enhance habitat, landscape connectivity and resilience. **MO7.** Healthier waterways enable more On Country activities for First Nations Peoples. **MO10.** Stewardship increases, with more people taking action to care for waterways.	Riparian vegetation condition, extent and connectivity are improved in intermittent-flow systems, Yarriambiack Creek and Dunmunkle Creek, within heavily cleared and cropped landscapes.	Support private landholders to protect and manage riparian areas on their properties by managing stock access and controlling weeds, foxes and rabbits.	To be determined, depending on funding.	**Wimmera CMA.** Private landholders. Trust for Nature.	*Yarriambiack Creek Waterway Action Plan (2018).* *Dunmunkle Creek Waterway Action Plan (2020).* *Wimmera Proportion of Waterways Protected – Stage 2 (2024).* *Trust for Nature Statewide Conservation Plan 2021-2030.*	Continuation of work under the previous regional waterway strategy.
			Reduce the impact of problem invasive fauna on riparian vegetation by controlling rabbits.	200 ha.	**Wimmera CMA.** **Public Land Managers.** **Agriculture Victoria.** Private landholders.	*Wimmera Invasive Plant and Animal Management Strategy (2019).*	Continuation of work under the previous regional waterway strategy.
			Reduce the impact of weeds on riparian vegetation by controlling problem weeds in priority areas, such as blackberry, gorse, broom, boneseed and bridal creeper.	200 ha.			

Priority area	Medium-term outcomes (MO)	Contribution to the medium-term outcomes (What the management action seeks to influence to achieve the outcome).	Management action	Amount by 2036	Responsible parties (Lead organisations are **bold**).	Connection with other plans or strategies	Status
			Monitor for new incursions or spread of pest plants and animals. Treat populations to prevent new, or greater, establishment where feasible.	1 partnership per year in collaboration with land managers.	**Wimmera CMA.** Public land managers. Local government. Private landholders.		
Dunmunkle Creek	**MO2.** Priority areas have improved management to enhance habitat, landscape connectivity and resilience.	Natural hydrology is restored, where feasible, including through levee removal or other practical interventions along Dunmunkle Creek. Riparian vegetation condition, extent and connectivity are improved in intermittent-flow system, Dunmunkle Creek, within heavily cleared and cropped landscapes.	Explore methods of restoring Dunmunkle Creek to a more natural state.	To be determined.	**Wimmera CMA.** GWMWater. Public land managers.	*Dunmunkle Creek Waterway Action Plan (2020).* *Dunmunkle Creek Decommissioning Report (2018).*	Continuation of previous work.

Drought refuge area management

Table 29. Management actions associated with managing drought refuge areas.

Priority area	Medium-term outcomes (MO)	Contribution to the medium-term outcomes (What the management action seeks to influence to achieve the outcome).	Management action	Amount by 2036	Responsible parties (Lead organisations are **bold**).	Connection with other plans or strategies	Status
Yarriambiack Creek.	**MO2.** Priority areas have improved management to enhance habitat, landscape connectivity and resilience. **MO7.** Healthier waterways enable more On Country activities for First Nations Peoples.	Riparian vegetation condition, extent and connectivity are improved in intermittent-flow systems, Yarriambiack Creek and Dunmunkle Creek, within heavily cleared and cropped landscapes.	Investigate opportunities to provide water for the environment to drought refuge pools from the Wimmera Mallee Pipeline, to support ecological values during dry periods.	1 investigation.	**Wimmera CMA.** Victorian Environmental Water Holder. GWMWater. Barengi Gadjin Land Council. Yarrilinks Landcare Network.	*Yarriambiack Creek Waterway Action Plan (2018).*	Concept – new action.

Supporting recreational access in balance with environmental and cultural values

Table 30. Management actions associated with supporting recreational access and amenity while minimising impacts on environmental and cultural values.

Priority area	Medium-term outcomes (MO)	Contribution to the medium-term outcomes (What the management action seeks to influence to achieve the outcome).	Management action	Amount by 2036	Responsible parties (Lead organisations are **bold**).	Connection with other plans or strategies	Status
Yarriambiack Creek.	**MO6.** Waterways identified as high priority for recreation and amenity provide enhanced recreational opportunities and community benefits, while minimising impacts on their environmental values.	High-priority recreational waterways provide safe, inclusive and well-maintained access that supports a range of recreational activities. Visitor impacts are effectively managed through infrastructure, site design and access controls that prevent environmental damage. Community members increasingly use and enjoy waterways for recreation, relaxation, cultural activities and connection with nature.	Investigate opportunities to improve management of the impacts of recreation and to improve recreational access.	Investigations in partnership with local government and community groups.	**Yarriambiack Shire Council.** **Wimmera CMA.** **Public Land Managers.** **GWMWater.** Recreational user groups.		Continuation of partnerships with key organisations and groups.

Implementation plan - Northern Wimmera Plains Wetlands (eastern section)

This Plan sets out an integrated program of management actions including water for the environment and complementary waterway management activities to maintain and improve the environmental, cultural and social values of the Northern Wimmera Plains Wetlands in the Yarriambiack and Buloke local area.

A strong focus is managing water for the environment provision to wetlands connected to the Wimmera Mallee Pipeline to support birds, turtles, frogs, wetland and riparian native plants and ecosystems. Complementary management actions such as invasive species control, habitat restoration, community partnerships and riparian vegetation and buffer zone maintenance and improvement will address key threats and improve long-term resilience.

Management actions are grouped in this Plan according to management themes:

Management theme	Table number
Water for the environment supporting wetland values.	Table 31
Reducing threats to wetlands and maintaining values.	Table 32

Appendix 1 contains the logic framework outlining the medium-term outcomes, values, threats and management actions that underpin this Plan. The key values supported and threats addressed by the Plan are summarised below.

Key values supported by this implementation plan
Support diverse native plants and animals.
Support threatened species.
Provide **wetland habitat and drought refuges** in a largely dry agricultural landscape.
Strong cultural connections and values for Wotjobaluk Nations Peoples.
High social value, with strong community support for their conservation.

Key threats addressed by this implementation plan
Reduced flows and inundation from climate change, drought and altered water regimes.
Changes to hydrology such as channels and dams in the wetland basin and surrounds.
Invasive plants and pest animals.
Habitat degradation, including overgrazing and recreation impacts.
Lack of connectivity, with narrow buffer areas generally surrounded by agricultural land.

Water for the environment supporting wetland values

Table 31. Management actions associated with maintaining or improving the values of wetlands connected to the Wimmera Mallee Pipeline, including management of water for the environment and complementary measures.

Priority area	Medium-term outcomes (MO)	Contribution to the medium-term outcomes What the management action seeks to influence to achieve the outcome.	Management action	Amount by 2036	Responsible parties (Lead organisations are **bold**).	Connection with other plans or strategies	Status
Wimmera Mallee Pipeline Wetlands including: Mutton Swamp. Sawpit Swamp. Carapugna. Krong Swamp. Tarkedia Dam. Harcoans. Fieldings Dam. Challambra Swamp. Opies Dam. Pinedale. Schultz Koschizke. (Two additional pipeline wetlands are also present in the Upper Catchment and Hindmarsh local areas).	**MO2.** Priority areas have improved management to enhance habitat, landscape connectivity and resilience. **MO4.** Drought refuges support native species' survival and resilience during dry periods.	Wetland vegetation and riparian habitat condition are maintained or improved. The condition of Wimmera Mallee Pipeline wetlands to function as refugia for water-dependent flora and fauna and terrestrial fauna is maintained or enhanced, particularly during drought and dry conditions.	Develop annual seasonal watering proposals for the Wimmera Mallee Pipeline Wetlands.	10 proposals (comprised of 1 proposal annually).	**Wimmera CMA.** GWMWater. Victorian Environmental Water Holder. Yarriambiack Shire Council. Buloke Shire Council. Mallee CMA. North Central CMA.	*Environmental Water Management Plan – Wimmera Mallee Pipeline Wetlands – Wimmera CMA Region (2016).* Annual seasonal watering plans issued by the Victorian Environmental Water Holder.	Continuation of existing arrangements.
			Deliver water to Wimmera Mallee Pipeline Wetlands on behalf of GWMWater and in line with annual seasonal watering plans.	The volume (ML) of water delivered and timing of deliveries depends on annual watering entitlements and seasonal watering plans.	**Wimmera CMA.** GWMWater. Victorian Environmental Water Holder.		
			Implement infrastructure improvements to maximise outcomes from water for the environment from the Wimmera Mallee Pipeline.	To be determined.	**GWMWater.** **Wimmera CMA.** Victorian Environmental Water Holder. Public land managers. Barengi Gadjin Land Council.	*Environmental Water Management Plan – Wimmera Mallee Pipeline Wetlands – Wimmera CMA Region (2016).*	New action.

Priority area	Medium-term outcomes (MO)	Contribution to the medium-term outcomes What the management action seeks to influence to achieve the outcome.	Management action	Amount by 2036	Responsible parties (Lead organisations are **bold**).	Connection with other plans or strategies	Status
	MO1. Ongoing collaboration and two-way learning in waterway planning and management, supporting self-determination and strengthening partnerships with First Nations Peoples. **MO2.** Priority areas have improved management to enhance habitat, landscape connectivity and resilience. **MO7.** Healthier waterways enable more On Country activities for First Nations Peoples.	First Nations Peoples are empowered to actively care for and make decisions about healthy waterways, supporting self-determination and strengthening connections to Country. Wetland vegetation and riparian habitat condition are maintained or improved.	Explore traditional methods of vegetation management such as cultural burning to enhance wetland habitat in wetlands connected to the Wimmera Mallee Pipeline.	To be confirmed in consultation with Barengi Gadjin Land Council and Parks Victoria.	**Wimmera CMA.** **Barengi Gadjin Land Council.** Parks Victoria.	*Environmental Water Management Plan – Wimmera Mallee Pipeline Wetlands – Wimmera CMA Region (2016).* *Growing What Is Good Dya (Country) Plan (2026).*	New action.

Reducing threats to wetlands and maintaining values

Table 32. Management actions associated with reducing threats to wetlands with high environmental value and maintaining environmental and other values.

Priority area	Medium-term outcomes (MO)	Contribution to the medium-term outcomes What the management action seeks to influence to achieve the outcome.	Management action	Amount by 2036	Responsible parties (Lead organisations are **bold**).	Connection with other plans or strategies	Status
Wetlands with high environmental value.	**MO3.** Wetland modification, loss and deterioration of condition occurs at a declining rate. **MO10.** Stewardship increases, with more people taking action to care for waterways.	The rate of wetlands impacted by modifications including drainage changes, dam construction, cropping and new land development slows or stabilises over time. Wetland buffers, wetland vegetation communities and wetland physical form are maintained or improved on private and public land.	Implement community education activities to increase awareness of cropping, grazing and drainage impacts on wetlands, the values of wetlands and appropriate conservation management techniques.	To be determined based on funding.	**Wimmera CMA.** Landcare. Trust for Nature.	*Wimmera Wetland Asset Strategy.*	Continuation of work under the previous regional waterway strategy.
Public wetlands.	**MO3.** Wetland modification, loss and deterioration of condition occurs at a declining rate. **MO7.** Healthier waterways enable more On Country activities for First Nations Peoples. **MO10.** Stewardship increases, with more people taking action to care for waterways.	Wetland buffers, wetland vegetation communities and wetland physical form are maintained or improved on private and public land.	Control pest animals in priority areas to reduce their impact on key wetland values.	100 ha.	**Parks Victoria.** **Wimmera CMA.** **Barengi Gadjin Land Council.**	*Wimmera Invasive Plant and Animal Management Strategy 2019.*	Continuation of work under the previous regional waterway strategy.
			Control weeds in priority areas to reduce their impact on key wetland values.	100 ha.			
			Monitor for new incursions and spread of pest plants and animals. Treat problem populations to prevent new or greater establishment, where feasible.	1 partnership per year in collaboration with land managers.	**Wimmera CMA.** **Parks Victoria.** **Barengi Gadjin Land Council.** **Local Government.** Landcare.		