2026-2036







WIMMERA WATERWAY STRATEGY

IMPLEMENTATION PLAN

VICTORIA State Government Australia

Wimmera CMA

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Publication details

Wimmera Waterway Strategy - Implementation Plan

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Acknowledgement of Country

Wimmera CMA acknowledges the Traditional Custodians of the land and waters where we work and pay our respects to Elders past and present. We acknowledge and respect Traditional Owners, Aboriginal communities and organisations. We recognise the diversity of their cultures and the deep connections they have with Victoria's lands and waters.

We value partnerships with Traditional Owners for the health of people and Country. Wimmera CMA Board, management and staff recognise the primacy of Traditional Owners' obligations, rights and responsibilities to use and care for their traditional lands and waters.

Acknowledgements

Wimmera CMA thanks the many regional stakeholders, groups and individuals whose contributions assisted with the preparation of this Implementation Plan for the Wimmera *Waterway Strategy*.

Pictures supplied by Wimmera CMA, Geomorphe and Marty Schoo.

Maps were produced by Wimmera CMA using Arc GIS software and data.

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Acronyms

BGLC	Barengi Gadjin Land Council
CMA	Catchment Management Authority
DEECA	Victorian Government Department of Energy, Environment and Climate Action
EMAC	Eastern Maar Aboriginal Corporation
GWMWater	Grampians Wimmera Mallee Water
MERI	Monitoring, Evaluation, Reporting and Improvement
RCS	*Regional Catchment Strategy*
RWS	*Regional Waterway Strategy*
Wimmera CMA	Wimmera Catchment Management Authority

Introduction

The *Implementation Plan - Wimmera Waterway Strategy* (the Plan) outlines the practical steps required to support the region's vision for:

> *"A healthy Wimmera catchment where a resilient landscape supports a sustainable and profitable community."*

This Plan builds on the desired outcomes and strategic priorities identified in the *Wimmera Waterway Strategy* (the Strategy), translating them into actions and initiatives for delivery over the next decade.

The Plan focuses on:

- **Improving waterway condition and habitat** through targeted actions such as riparian restoration, water for the environment, erosion control and habitat enhancement.
- **Supporting the values, priorities and knowledges of First Nations Peoples,** supporting cultural connections to waterways and self-determination.
- **Enhancing stewardship of waterways** by engaging communities and fostering partnerships with landholders, local government, community groups, First Nations Peoples and other stakeholders.
- **Addressing key threats** including invasive plants and animals, altered flow regimes and climate variability.
- **Aligning with statewide and regional policy frameworks**, including the *Victorian Waterway Management Strategy* and *Wimmera Regional Catchment Strategy*.

The Plan provides a roadmap for investment, collaboration and adaptive management, enabling the region to respond effectively to emerging challenges while delivering long-term benefits for waterways and communities.

Overview

This document presents a practical roadmap for translating the Strategy's vision, outcomes and priorities into coordinated on-ground actions.

Specifically, the Plan aims to:

1. **Explain how the priorities identified in the Strategy will be delivered.**
2. **Outline management actions to achieve the Strategy's medium-term** (<10-year) outcomes in the highest-priority areas, establishing clear progress towards the long-term (>20-year) outcomes.
3. **Identify the lead organisations responsible for each action**, along with partner and supporting organisations.
4. **Set out what can be achieved with currently anticipated funding** and describe the additional actions that could be delivered if further funding becomes available.
5. **Provide links to supporting documentation**, including evidence and justification for each action.

The Plan supports delivery of the Strategy by defining the actions required to achieve medium- and long-term outcomes in priority areas. Together with the *Monitoring, Evaluation, Reporting and Improvement Plan – Wimmera Waterway Strategy* (the MERI Plan), it enables a flexible and adaptive management approach that can respond to new information, emerging issues and changing conditions throughout implementation.

All implementation actions will be guided by the best available science, knowledge and evidence.

Successful implementation relies on the collaborative effort of all parties involved in caring for Wimmera waterways, including waterway managers, First Nations Peoples, community, industry, landholders and other stakeholders.

Progress will be measured using performance indicators, measures, evaluation and reporting set out in the MERI Plan, ensuring transparency and accountability. Implementation of the MERI Plan will inform learning and adaptive management throughout implementation of the Strategy.

Strategic guidance

The Strategy provides the strategic foundation for this Implementation Plan. It establishes the long-term direction for waterway management across the region and identifies the desired outcomes, priorities and partnerships needed to achieve them. Key elements of the Strategy that guide implementation include:

- The **strategic context**, which aligns regional outcomes with relevant Australian and Victorian legislation, policies, planning frameworks and complementary regional strategies and plans.
- The **guiding principles** for implementation, which provide a consistent foundation for planning, decision-making and the delivery of management actions across the region.
- The **implementation partnerships** and associated roles and responsibilities of Wimmera CMA, First Nations Peoples, local communities, private landholders, government agencies and other key stakeholders.
- The **long-term and medium-term outcomes** that provide the basis for priority areas, investment and action. Long-term outcomes reflect the region's aspirations for waterways and are expected to take 20 years or more to achieve. Medium-term outcomes are intended to be achieved within the life of the Strategy and are supported by the actions, targets and evaluation framework outlined in this Plan and the MERI Plan.
- The identification of **priority areas**, which focus effort and investment where they are expected to make the greatest contribution to achieving desired environmental, cultural, social and economic outcomes for rivers, streams, wetlands and their floodplains.

Together, these elements provide the strategic framework for implementation and have informed the development of this Plan, including the selection of management actions and delivery priorities.

First Nations Peoples - knowledge and priorities

Traditional Owner priorities in *Water is Life - Traditional Owner Access to Water Roadmap* include actions for increasing the resourcing for and role of Traditional Owners in the care and management of waterways and catchments. Regional waterway strategies play a significant role in progressing these actions.

Wimmera CMA and Traditional Owner groups, Barengi Gadjin Land Council and Eastern Maar Aboriginal Corporation, collaborated to develop the Strategy in ways self-determined by each group. We aim to enhance these partnerships during implementation of this Plan.

The Strategy and this Plan acknowledge and respect Traditional Owners' obligations and rights to care for water and Country. Together, the two documents seek to increase the role of cultural knowledges, where Traditional Owner consent is provided, to inform and enhance collaboration and support for waterway management activities on Country.



Lake Marma at Murtoa.



A landowner discussing waterway enhancement actions with Wimmera CMA staff in the Upper Catchment local area.

Funding and cost-sharing

Decisions about what activities to invest in and roles and responsibilities will be made in line with the cost-sharing principles in the *Victorian Waterway Management Strategy*.

Victorian Government Funding

The *Victorian Waterway Management Strategy* describes the government investment and cost-sharing arrangements for waterway management, summarised below.

The Victorian Government provides funding for waterway management from the environmental contributions. This is a legally required contribution from water corporations to fund initiatives that promote the sustainable management of water or address adverse environmental impacts of water consumption and extraction.

Environmental contributions funding is provided to the Department of Energy, Environment and Climate Action (DEECA), catchment management authorities (CMAs) and Traditional Owners for waterway management activities. It is also provided to the Victorian Environmental Water Holder to enable it to undertake its required functions for managing water for the environment. DEECA supports CMAs to run programs using environmental contribution funds for priority projects. This may involve cost-sharing with other organisations, community groups and individuals in line with the cost-sharing principles in the *Victorian Waterway Management Strategy* and this Plan.

In addition to the state funds provided directly for waterway management, other funds are provided by the Victorian Government that can benefit the environmental condition of waterways. For example, funds are provided:

- To public land managers, such as Parks Victoria and DEECA to manage the land assigned to them in accordance with statutory requirements, which may include waterway management activities.
- To regional organisations such as rural water corporations to undertake activities outside their statutory functions and not covered by customers.
- Through the '*Our Catchments, Our Communities Program*,' supporting integrated catchment management programs.
- For natural disaster relief assistance.

Australian Government funding

The Australian Government provides funds for waterway management through national programs, such as the *Natural Heritage Trust Program*, which includes the *Urban Rivers and Catchments Program* and the *Restoring our Rivers Program* in the Murray Darling Basin.

Australian Government funding generally applies to matters of national significance, such as threatened species and communities and Ramsar sites listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Regional funding

Regional and local contributions for implementing activities that contribute to waterway outcomes include:

- Funding and in-kind contributions from landholders, community groups and individuals.
- Local government management of land under its responsibility, such as public open space beside waterways in townships.
- Funding from philanthropists towards regional or local plans and initiatives.

Cost-sharing principles

Victoria's waterway management approach continues to ensure that resources are directed to the areas of highest priority. Priority areas for investing in management actions are identified in the Strategy, informed by state priorities, regional planning processes and, where applicable, place-based plans such as local government and Parks Victoria's plans.

Progressing strategic outcomes is a significant task requiring considerable resources and long-term commitment. Cost-sharing with organisations, groups and individuals that benefit from a management activity is an effective way to achieve outcomes with limited resources.

This Plan seeks to implement the Victorian Government's cost-sharing principles for all waterway management projects. These principles are:

1. **Duty of care –** All natural resource users and managers have a duty of care to ensure that they do not damage the natural resource base, as outlined in the *Catchment and Land Protection Act 1994* and Victorian *Environment Protection Framework*. They are responsible for making good any damage incurred because of their actions.
2. **Government contributions to private beneficiaries –** The government contributes primarily to activities that produce public benefits. The government may agree to contribute to land and water management activities that provide significant public benefit and where government support is required to facilitate this uptake.
3. **Net public benefit –** Net public benefits to the Victorian environment, economy and community values must be demonstrated.
4. **Beneficiary pays –** Users, both existing and future, are expected to pay for activities that provide private benefits. Contributions from indirect beneficiaries will, where appropriate, be negotiated with the primary beneficiaries. Managing risks from waterway processes to public and private infrastructure is primarily the responsibility of the infrastructure owner.
5. **Private cost-share contributions –** Management activities will be prioritised based on the greatest public benefit for the least public cost. Where the public cost of a management activity is reduced by financial or in-kind contributions by private or corporate stakeholders, this will influence the support for this activity.
6. **Upfront and maintenance costs –** Waterway managers may collaborate with private landholders and with other government agencies, to upgrade a built asset to a declared standard. After that, the beneficiary will generally be responsible for its maintenance. Government or waterway managers may also collaborate with private landholders and with other government agencies to build new assets, on the proviso that maintenance of the built asset will be the responsibility of the beneficiary.
7. **Extreme events –** Funding for the repair and recovery of essential public assets following natural disasters will be in accordance with state and national disaster recovery funding arrangements.
8. **Statewide policy and monitoring –** The Victorian Government will contribute to the cost of statewide planning, resource monitoring and assessment, research and investigations where they are crucial to evaluating the success of statewide and regional waterway management approaches.

Government may invest where public good benefits outweigh costs and all duty of care and beneficiary pays avenues have been exhausted.

Examples of beneficiaries of waterway management activities include recreation groups, private landholders, water corporations, local government representing regional economic benefits, the broader Victorian community and owners and managers of public infrastructure.

Local area implementation plans

Introduction

The Wimmera region contains a diverse range of rivers, streams, wetlands and floodplains, each with distinct values, management challenges and opportunities. While the Strategy establishes a consistent regional framework for waterway management, effective implementation requires actions to be tailored to local circumstances and priorities.

To support this, the Implementation Plan includes a series of Local Area Implementation Plans. These plans translate the Strategy's regional outcomes into place-based management approaches and actions for individual waterways, wetland systems and geographic areas across the region. They identify the specific activities and partnerships required to address local threats, protect values and contribute to the achievement of the Strategy's medium-term and long-term outcomes.

Each Local Area Implementation Plan includes:

- A description of the area's key environmental, cultural, social and economic values.
- The primary threats, issues and management challenges affecting waterways and wetlands within the area.
- Stakeholder views on priorities, issues and approaches contributed during the Strategy's development.
- The medium-term outcomes most relevant to the area and the rationale for prioritising management effort.
- Management actions proposed over the life of the Implementation Plan.
- Key implementation partners and opportunities for collaboration and co-investment.

The Local Area Implementation Plans recognise that management actions often contribute to multiple outcomes and that waterways should be managed as interconnected social, cultural and ecological systems. Together, they provide the primary framework for coordinating on-ground delivery, guiding investment decisions, and tracking progress towards the region's desired waterway outcomes.

As knowledge, priorities and funding opportunities evolve, Local Area Implementation Plans may be updated to reflect emerging needs, new information and changing implementation priorities, ensuring management remains adaptive and responsive over the life of the Strategy.

Local areas

The Wimmera's five local areas are based on local government and sub-catchment boundaries. This place-based approach provides a practical framework for planning, prioritising and delivering waterway management actions on a local scale. It recognises that environmental values, threats, community priorities and management opportunities vary across the region and that communities relate to their local areas and waterways.

The Wimmera's local areas are shown in Figure 1 and include:

1. Hindmarsh
2. Horsham
3. Upper Catchment (including parts of Ararat, Northern Grampians and Pyrenees local government areas)
4. West Wimmera
5. Yarriambiack and Buloke.

The local areas recognise the importance of community-driven outcomes, participation and management. They seek to:

- Highlight the knowledge, values and priorities of local communities in a way that is meaningful and relevant in each area.
- Recognise that the characteristics of waterways and the land, biodiversity and communities that they are a part of vary across the region.
- Identify opportunities for organisations and communities to partner and collaborate to achieve local outcomes.

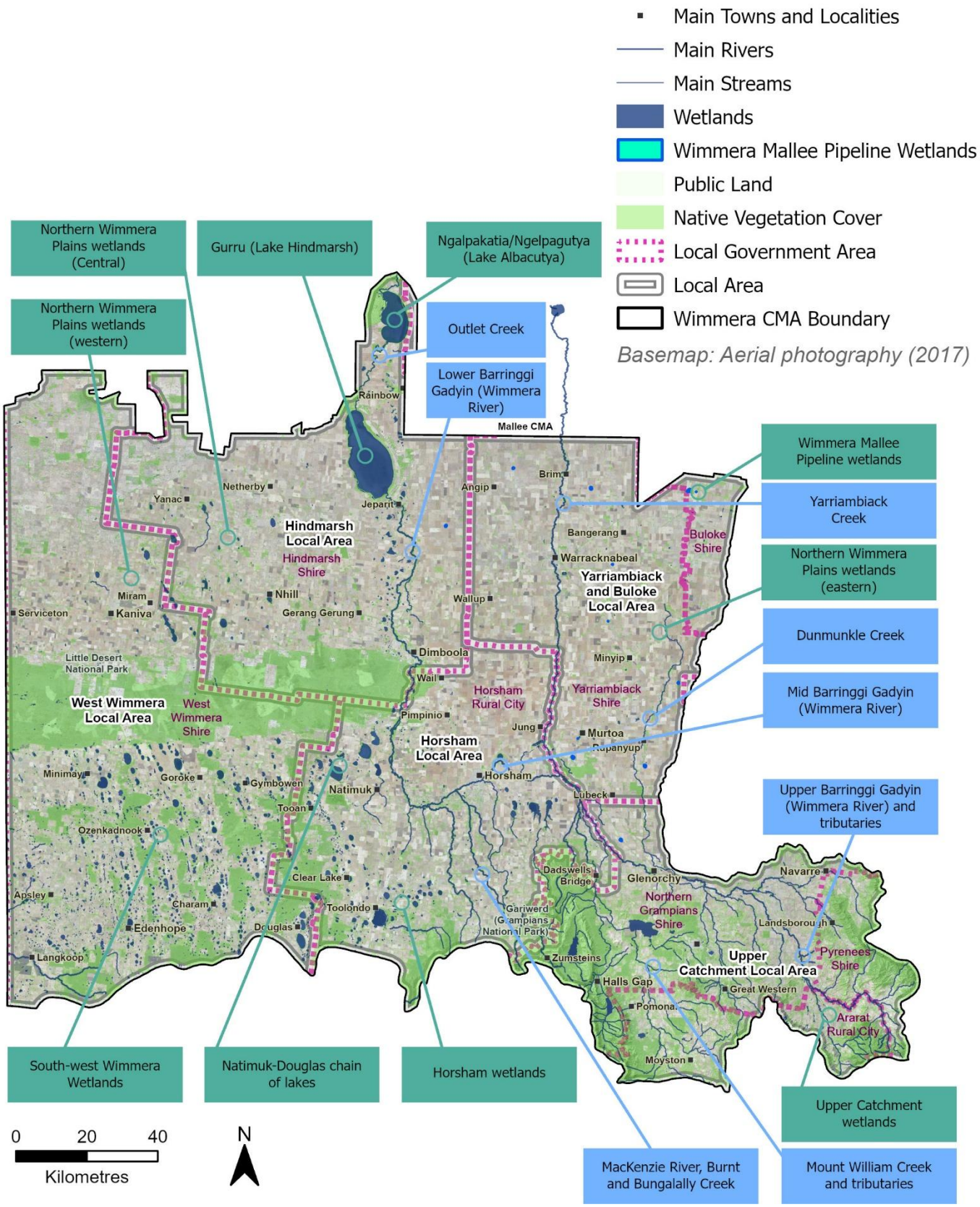
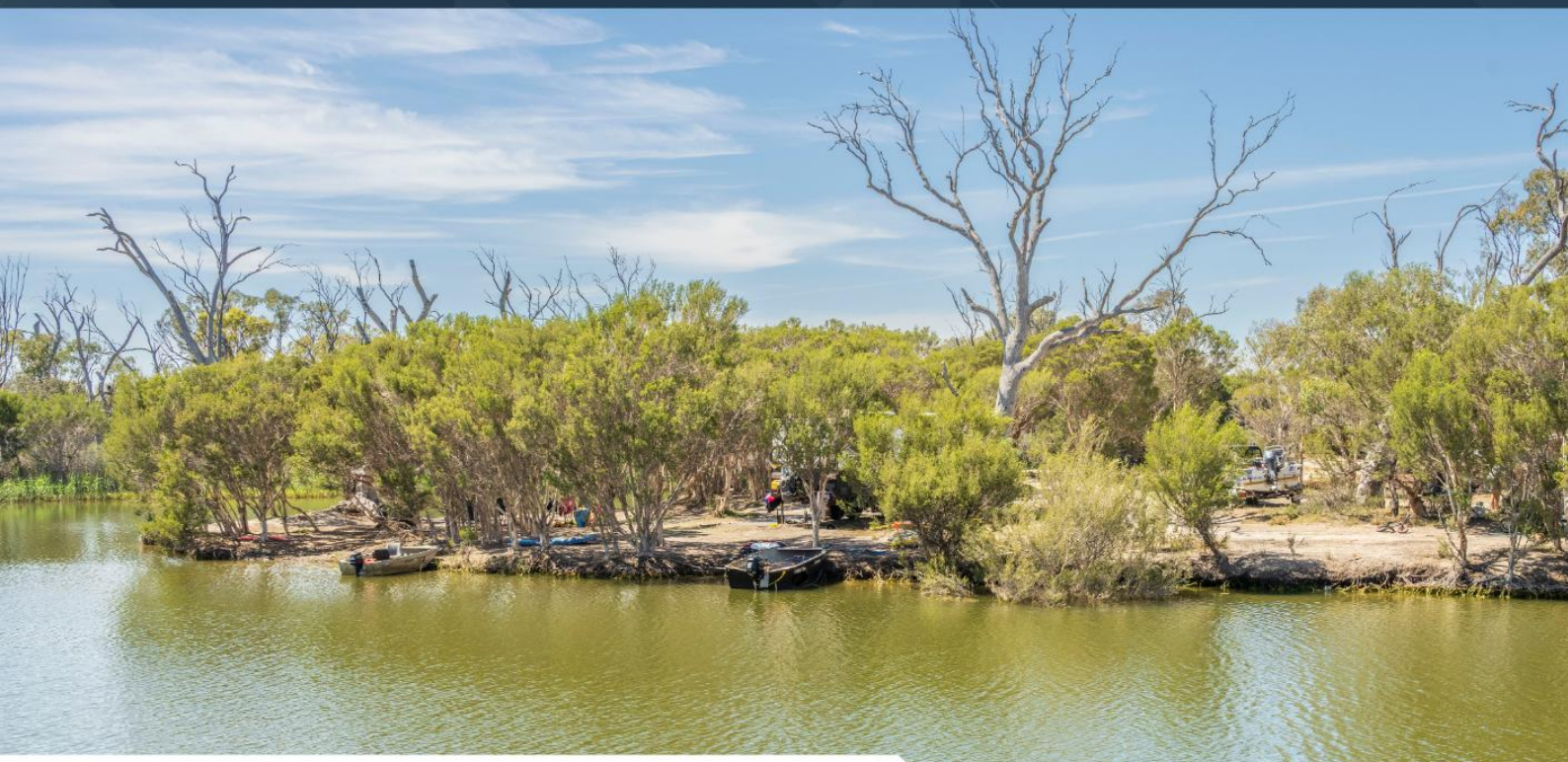


Figure 1. Local areas in the Wimmera. Information boxes are colour-coded by feature type: blue for rivers and streams and teal for wetlands.



HINDMARSH

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Hindmarsh local area

About the Hindmarsh local area

The Hindmarsh local area encompasses the southern part of Hindmarsh Shire, extending from the Little Desert National Park in the south to Wyperfeld National Park in the north. Its four main townships, Nhill, Dimboola, Jeparit and Rainbow, have a combined population of approximately 5,700 people. (1)

Waterways play an important role in the area's liveability and character. Dimboola and Jeparit are located along the Barringgi Gadyin (Wimmera River), while Nhill is situated beside Nhill Swamp and Lake (see Figure 2).

Covering almost 486,800 hectares, the area is predominantly agricultural. Land use is dominated by dryland broadacre cropping (68%) and modified pasture grazing (11%), while more than 15% of the landscape comprises native vegetation and waterways. (2)

Key natural features include the Little Desert National Park, the Barringgi Gadyin (Wimmera River) and a terminal lakes system comprising Gurru (Lake Hindmarsh), Outlet Creek, Ngalpakatia/Ngelpagutya (Lake Albacutya), Ross Lakes and other wetlands extending north to the Wirrengren Plain in the Mallee region.

Together, these waterways create a natural corridor linking the Little Desert and Wyperfeld National Parks through a productive agricultural landscape.

The area also contains many culturally significant places along the Barringgi Gadyin (Wimmera River) and its associated wetlands, including Gurru (Lake Hindmarsh), Ngalpakatia/Ngelpagutya (Lake Albacutya) and Ross Lakes. This section of the river lies within the Wotjobaluk Nations Native Title area, reflecting its enduring cultural significance and deep connection to Country.

Rivers and streams

The Barringgi Gadyin (Wimmera River) runs north through the length of the Hindmarsh local area before flowing into Gurru (Lake Hindmarsh), Victoria's largest freshwater lake.

While water is generally present along these lower reaches of the river, Gurru (Lake Hindmarsh) only fills during extended wet periods or major flood events. In exceptionally wet years, the lake can overflow into Outlet Creek, which flows to Ngalpakatia/Ngelpagutya (Lake Albacutya) and then north to a series of smaller wetlands and the Wirrengren Plain in the Mallee region. The Barringgi Gadyin (Wimmera River) and both lakes hold high cultural significance for the Wotjobaluk Nations Peoples.

Ngalpakatia/Ngelpagutya (Lake Albacutya) last filled in the 1970s and retained water until 1983. Since then, it has received only occasional minor inflows from local runoff. (3)

Gurru (Lake Hindmarsh) holds water following high flows in the Barringgi Gadyin (Wimmera River), but it only reaches capacity during periods of prolonged high flows or flooding. Between 2016 and 2026, water entered the lake on several occasions, attracting thousands of waterbirds and recreational visitors. However, the lake's broad, shallow nature makes it highly susceptible to evaporation. As a result, despite significant inflows, it did not completely fill and periodically dried out.

When holding water, Gurru (Lake Hindmarsh) and Ngalpakatia/Ngelpagutya (Lake Albacutya) support thousands of waterbirds and provide habitat for a range of significant species. Ngalpakatia/Ngelpagutya (Lake Albacutya) supports nationally threatened species and communities, including the regent parrot (*Polytelis anthopeplus*), pine-buloke woodlands and a distinctive salt-tolerant form of river red gum. Ngalpakatia/Ngelpagutya (Lake Albacutya) is internationally recognised as a Ramsar wetland and both lakes are listed as nationally important wetlands.

When inundated, the lakes become major recreation destinations for activities such as water skiing, fishing, yabbying, birdwatching and camping. Outlet Creek, which connects the two lakes, also supports significant biodiversity and cultural heritage values.

Datchak Creek is a 28-kilometre anabranch of the lower Barringgi Gadyin (Wimmera River). It branches from the river downstream of Dimboola, flows through Arkona and rejoins the river near Antwerp. The creek is an important cultural landscape for Wotjobaluk Nations Peoples and contains extensive cultural heritage values, including scarred and culturally modified trees.

Wetlands

Hindmarsh contains more than 280 wetlands, ranging from large systems like Gurru (Lake Hindmarsh) to small seasonal wetlands. Notable examples include Ramsar-listed Ngalpakatia/Ngelpagutya (Lake Albacutya), nationally important wetlands including Gurru (Lake Hindmarsh) and Pink Lake; and key local wetlands including Ross Lakes, Nhill Lake, Nhill Swamp, Mount Elgin Swamp and Yanac Swamp.

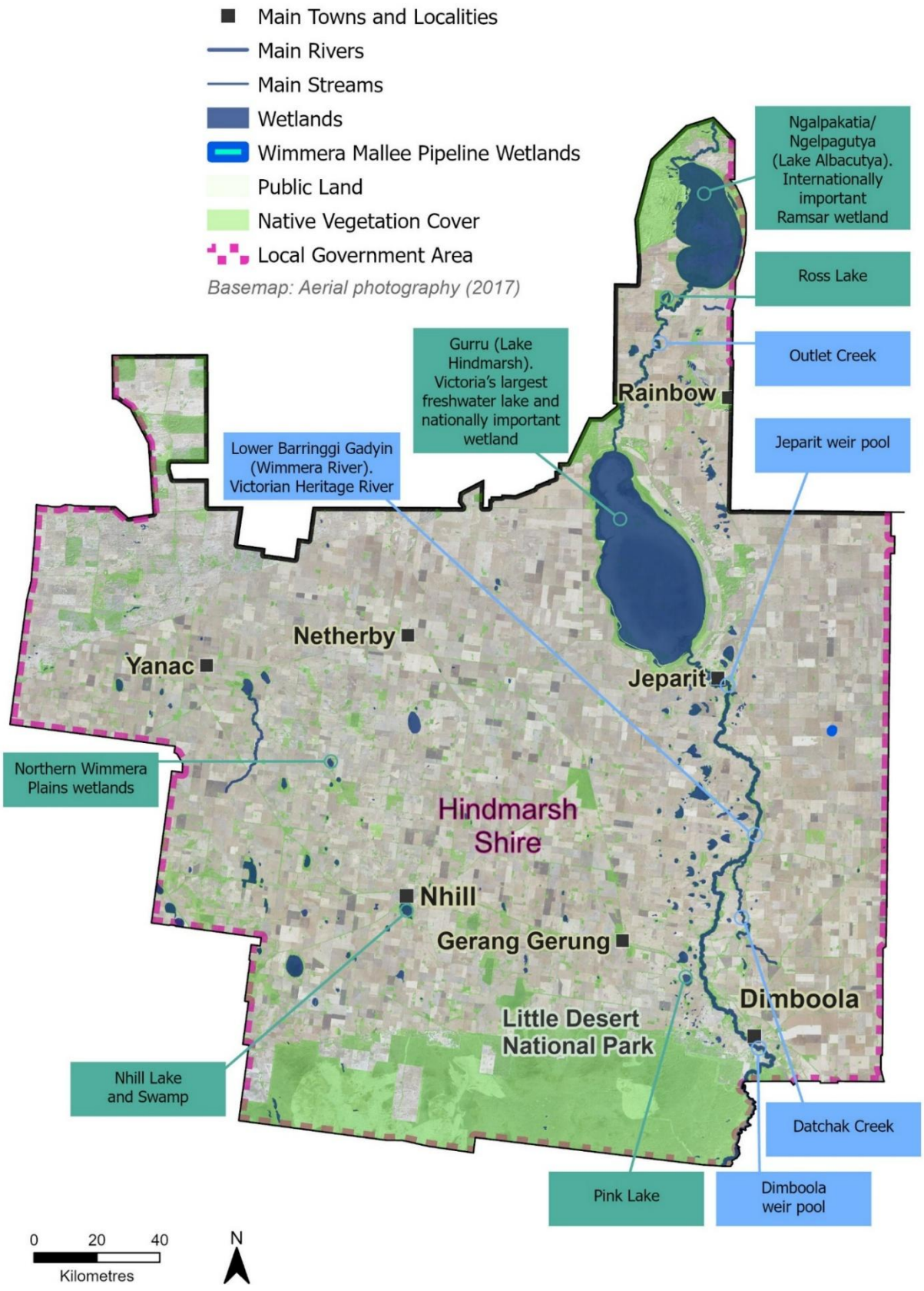


Figure 2. The Hindmarsh local area and key waterway assets. Information boxes are colour-coded by feature type: blue for rivers and streams and teal for wetlands.

Lower Barringgi Gadyin (Wimmera River) and terminal lakes

Flagship Waterway

The Lower Wimmera River Flagship Waterway project focuses on the Lower Barringgi Gadyin (Wimmera River) downstream of Horsham, including Outlet Creek and terminal lakes, Gurru (Lake Hindmarsh) and Ngalpakatia/Ngelpagutya (Lake Albacutya) (see Figure 3).

The project's vision is to ensure that, by 2040, the Lower Barringgi Gadyin (Wimmera River) will be a healthy, functioning ecosystem that supports social, cultural and recreational activities. Wimmera CMA is leading the project, working in partnership with public and private land managers, Traditional Owners and community groups.

To achieve this vision, the project will deliver a range of threat mitigation and environmental enhancement activities aimed at improving the quality, extent and connectivity of riparian vegetation and habitat. It will also support local and regional investment in the Lower Barringgi Gadyin (Wimmera River) and enable angling clubs and community groups to undertake priority work along the waterway.

Key activities include:

- **Pest plant and animal control** to reduce competition and grazing pressure on native vegetation and wildlife.
- **Fencing and revegetation** to protect existing habitat, increase native vegetation cover and improve biodiversity outcomes.
- **Bank stabilisation works** to reduce erosion and sedimentation, while protecting environmental, cultural and recreational values.

The project will be delivered as part of a broader program of work across the Lower Barringgi Gadyin (Wimmera River). This includes the management and delivery of environmental water, as well as initiatives that support land stewardship, recreation and community wellbeing through the Victorian Government's *Our Catchments, Our Communities* program.

River and stream values

The Barringgi Gadyin (Wimmera River) downstream of Polkemmet, along with Gurru (Lake Hindmarsh), Ngalpakatia/Ngelpagutya (Lake Albacutya) and Outlet Creek, is listed as the *Wimmera Heritage River* under the *Heritage Rivers Act 1992*. This 165-kilometre system is recognised for its conservation, scenic, recreational and cultural significance. [4]

Environmental values

The Wimmera Heritage River forms an important native vegetation corridor through a largely agricultural landscape. Riparian vegetation remains highly intact, with 92% of the Barringgi Gadyin (Wimmera River) and Outlet Creek protected from stock access.[5] Significant vegetation communities include the depleted Riverine Chenopod Woodlands, vulnerable Intermittent Swampy Woodlands, Lignum Swampy Woodlands and Semi-arid Woodlands as well as scattered remnants of the endangered Low Rise Woodlands. [6]

The river system supports a range of significant fauna, including the critically endangered pink cockatoo (*Lophochroa leadbeateri)* and Australasian bittern *(Botaurus poiciloptilus)*. [7] Native fish species include Australian smelt (*Retropinna semoni),* common galaxias (*Galaxias maculatus*), carp gudgeon (*Hypseleotris spp.*) and flat-headed gudgeon (*Philypnodon grandiceps*). Other species present, thought to have been introduced to the Wimmera, include the endangered freshwater catfish (*Tandanus tandanus*), golden perch (*Macquaria ambigua)* and silver perch (*Bidyanus bidyanus*). Exotic fish species recorded in the system include carp (*Cyprinus carpio*), eastern gambusia (*Gambusia holbrooki*), goldfish, redfin (*Perca fluviatilis*) and roach (*Rutilus rutilus*).

When water is present, terminal lakes Gurru (Lake Hindmarsh) and Ngalpakatia/Ngelpagutya (Lake Albacutya) provide habitat for thousands of waterbirds. Ngalpakatia/Ngelpagutya (Lake Albacutya) supports nationally threatened species, including the regent parrot (*Polytelis anthopeplus*) and a unique salt tolerant form of river red gum. The lake is internationally recognised as a Ramsar wetland of importance, while both Gurru (Lake Hindmarsh) and Ngalpakatia/Ngelpagutya (Lake Albacutya) are listed as nationally important wetlands.

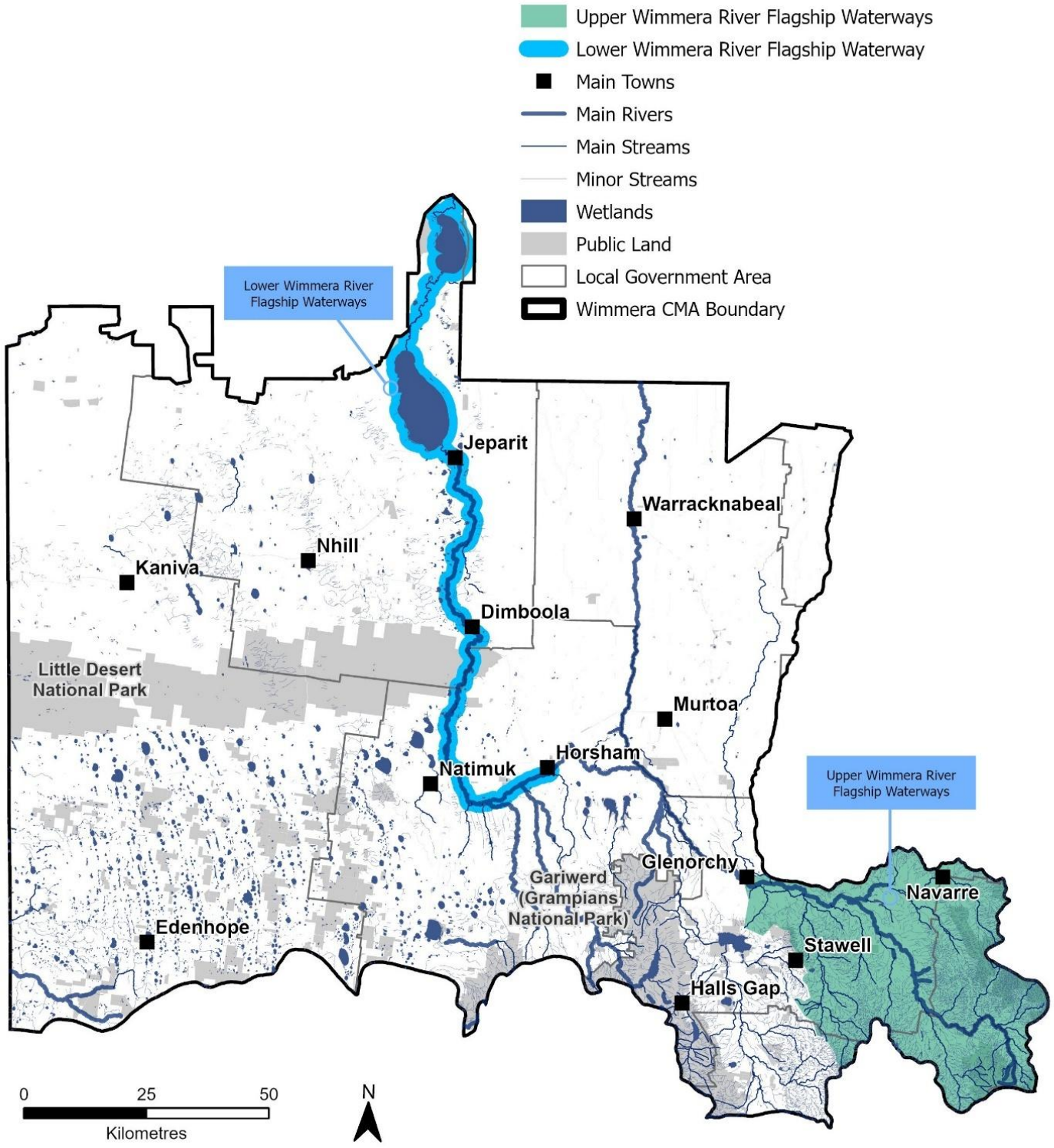


Figure 3. Flagship waterways in the Wimmera, including the Lower Wimmera Flagship Waterway.

Cultural values

The Barringgi Gadyin (Wimmera River) is central to the cultural identity, traditions and wellbeing of the Wotjobaluk Nations Peoples. For thousands of years, it has provided water, food and a focus for cultural life, with hundreds of significant cultural sites located along its banks. Traditional foods sourced from the river system included mussels, fish and water ribbons, while seasonal movements for ceremony and resource gathering reflected a deep understanding of Country.

Several places along the river remain important to Traditional Owners, including Ranch Billabong, The Common and the Antwerp property, all of which continue to provide opportunities for cultural connection, recreation and community gatherings. [8]

Ranch Billabong, near Dimboola, is owned freehold by Barengi Gadjin Land Council and managed on behalf of the Wotjobaluk Nations Peoples. The site holds strong cultural significance as a place where families lived, children were raised and people fished in the billabong. Registered with Aboriginal Victoria as an Aboriginal Place, it is a rare surviving example of a former Aboriginal 'fringe camp.'

The Common, also located on the Barringgi Gadyin at Dimboola, is another place of great cultural importance. Many Aboriginal families settled there following the closure of Ebenezer Mission and the area contains significant cultural heritage, including scarred trees and other Aboriginal cultural sites.

The Antwerp property has long been valued by Traditional Owners for camping, swimming and fishing along Datchak Creek and the Barringgi Gadyin. Following the closure of Ebenezer Mission, many families relocated to Antwerp and Elders continued to live there until recently. Traditional Owners maintain a strong connection to the area and aspire to see it restored as a place for gathering and cultural practice.

Gurru (Lake Hindmarsh) and Ngalpakatia/Ngelpagutya (Lake Albacutya) also hold profound cultural significance. Gurru was part of an important traditional trading route, while Ngalpakatia/Ngelpagutya contains evidence of long-standing Aboriginal occupation, including shell middens, oven mounds, scarred trees and artefact scatters.

The significance of the Barringgi Gadyin river system is further reflected in the many Creation stories that have been passed down through generations. In 2005, the Federal Court recognised non-exclusive Native Title rights for the Wotjobaluk, Jaadwa, Jadawadjali, Wergaia and Jupagulk Peoples across much of the lower Barringgi Gadyin. These rights include hunting, fishing, gathering and camping for personal, cultural and communal purposes in accordance with traditional laws and customs.

Scarred trees, shell middens, burial sites and artefact scatters found throughout the river corridor, particularly along the Barringgi Gadyin, provide enduring evidence of the deep and continuing connection between the Wotjobaluk Nations Peoples and the river system. While many sites have been recorded on the Victorian Aboriginal Heritage Register, numerous others remain uncatalogued along the length of the waterway.

Social and recreational values

The Barringgi Gadyin (Wimmera River) is an important recreational and tourism asset for the region. Its connection to the Little Desert National Park and surrounding reserves supports nature-based tourism, particularly during the spring wildflower season.

The Wimmera River Discovery Trail, which officially opened in late 2025, links the townships of Dimboola and Jeparit. Stretching 56 kilometres, the trail attracts visitors seeking walking, cycling and camping opportunities along the river corridor.

The Dimboola and Jeparit weir pools are focal points for community recreation and tourism. They provide access to walking tracks, picnic areas, campgrounds and water-based activities. Water skiing is popular when water levels are sufficient, particularly at the Dimboola weir pool and downstream of Jeparit near Gurru (Lake Hindmarsh).

Fishing is another major recreational activity, with golden perch and silver perch populations augmented through stocking programs, alongside a valued population of freshwater catfish. Recreational fishing competitions attract participants from across western Victoria and interstate.

Dimboola hosts several high-profile water sports events, including its annual rowing regatta and barefoot water-skiing competitions. Among these is Australia's largest night-jump competition, which attracts more than 2,000 visitors each year. Local clubs have also invested substantially in riverfront infrastructure and facilities, further enhancing the river's recreational appeal.

In Jeparit, the annual Easter fishing competition is a key community event, drawing hundreds of competitors and spectators to the township.

When water is present, Gurru (Lake Hindmarsh) and Ngalpakatia/Ngelpagutya (Lake Albacutya) become major regional recreation destinations, supporting activities such as water skiing, fishing, yabbying, birdwatching and camping.

Economic values

The lower Barringgi Gadyin (Wimmera River) is an important driver of economic activity in the region. In 2022-23, an estimated 21,500 people used the river in Dimboola and 6,400 in Jeparit, generating approximately $737,000 in economic activity through visitor spending on accommodation, food, fuel, retail purchases and recreational activities. River-based events provide additional economic benefits for local communities, with the 2022 Dimboola barefoot skiing event contributing $67,000 and the Jeparit Easter fishing competition generating a further $48,000 from day and overnight visitors. [9]

Recreation opportunities support local businesses and tourism operators, while major community events help attract visitors from across western Victoria and interstate, strengthening the economic contribution of the lower Wimmera River to the region.

River and stream condition

River condition in the Hindmarsh area is strongly influenced by rainfall, runoff and streamflow patterns. In the 2010 Index of Stream Condition surveys, the Barringgi Gadyin (Wimmera River) reach between Antwerp and Gurru (Lake Hindmarsh) was assessed as being in poor condition, while the reach upstream of Antwerp was rated moderate. These assessments were undertaken following the Millennium Drought and have not been repeated. However, conditions have improved substantially since that time, with higher water availability, including water for the environment allocations, contributing to healthier river and floodplain ecosystems.

Although Outlet Creek has not flowed since Index of Stream Condition monitoring commenced in 1999, it remains protected as part of the Wimmera Heritage River. Its riparian corridor has retained relatively good condition, achieving moderate streamside zone ratings and continuing to provide valuable habitat and landscape connectivity. (10)

Water quality does not always meet the targets set in Victoria's *Environment Reference Standards*. Nevertheless, since the end of the Millennium Drought water quality has generally been sufficient to support native fish populations, recreational use and community activities, including fishing competitions, rowing regattas and other river-based events.

The condition of culturally significant trees varies across the river system, ranging from good to poor depending on water availability and water quality.

Threats and drivers of change

Hydrology – Climate change and dry conditions

Climate change is placing increasing pressure on the natural assets of the Hindmarsh area. Rising temperatures and a decline in rainfall across the headwaters of the Barringgi Gadyin (Wimmera River) have reduced flows to the lower river system. Water availability is further affected by upstream extraction for urban water supplies, agriculture and stock and domestic use.

Reduced river flows diminish aquatic habitat and limit connectivity between river and wetland environments, affecting the movement of native species and the health of aquatic ecosystems. Lower flows also contribute to declining water quality. Salinity can increase when saline groundwater enters the river and there is insufficient freshwater flow to dilute or flush salts. As a result, the resilience of the river system and the environmental values it supports are increasingly vulnerable to prolonged dry conditions

Saline groundwater intrusion

Saline groundwater entering the lower Barringgi Gadyin (Wimmera River) is a major threat to water quality and the health of fish, aquatic ecosystems and riparian vegetation. This risk is greatest during periods of low or zero river flow, when reduced volumes of freshwater are less able to reduce and dilute saline groundwater inputs.

During the Millennium Drought, streamflows declined dramatically and salinity levels in some pools rose to concentrations exceeding seawater. These conditions contributed to severe declines in river health.

Since the drought ended and the major floods of 2010 and 2011, targeted management of water for the environment flows has helped improve water quality. Natural flows and water for the environment have flushed and diluted salts, maintained connectivity between pools, protected drought refuges and supported instream and riparian vegetation. As a result, overall river health has generally improved, although drought periods in 2014-15, 2018 and 2020-21 again reduced flows and led to declines in water quality.

Weeds and pest animals

A range of invasive weeds threaten the health and integrity of riparian and wetland vegetation along the lower Barringgi Gadyin (Wimmera River). Key species include boneseed (*Chrysanthemoides monilifera subsp. Monilifera*), African boxthorn (*Lycium ferocissimum*), bridal creeper (*Asparagus asparagoides*), horehound (*Marrubium vulgare*), prickly pear (*Opuntia spp.*), wheel cactus (*Opuntia robusta*) and olives (*Olea eurpaea*). Ongoing monitoring and management are needed to prevent these weeds from spreading, particularly as floods and wildlife can disperse them further down the river and terminal lake system.

Rabbits also pose an ongoing threat to riparian vegetation by damaging native plants and hindering natural regeneration.

Annual fish monitoring indicates that native fish populations are improving. However, carp and other introduced fish species remain a significant threat. These species compete with native fish for habitat and food, disturb river sediments and increase water turbidity and nutrient levels through their feeding behaviour. Carp can also reproduce rapidly when conditions are favourable.

Monitoring results up to 2025 indicate that, despite their continued presence, the impacts of carp have not increased. (11)

Grazing by livestock

Livestock grazing is considered a relatively low threat to the lower Barringgi Gadyin (Wimmera River). Approximately 92% of the river frontage is protected from livestock access, helping to reduce impacts on riverbanks, vegetation and water quality. (12)

Grazing pressure is further reduced by the surrounding land use, which is predominantly broadacre cropping. Many landholders no longer run livestock, limiting the potential for stock to affect riparian vegetation and river health.

Impacts of recreation

Recreational activities, particularly motorised boating and water-skiing, can affect the health of the Barringgi Gadyin (Wimmera River). Boat wake can contribute to riverbank erosion, which may destabilise riverbank trees and increase the risk of trees falling into the river, creating hazards for river users. To address these issues, Wimmera CMA collaborates with Hindmarsh Shire Council, Barengi Gadjin Land Council, land managers and local community groups to implement measures to reduce erosion and help protect cultural heritage values along the river corridor.

Illegal activities, including the creation of informal vehicle tracks, rubbish dumping and firewood collection, continue to damage riverbanks and vegetation, contributing to erosion and degradation of the river environment.

Jeparit Waterwatch Group – more than 30 years



Jeparit Waterwatch Group volunteers Jeanie Clark, Sue Afford and Martin Stone (pictured above) celebrated 30 years of water quality monitoring in the lower Wimmera catchment in 2025. The group is Victoria's longest running Waterwatch group.

Established in May 1995 by a group of retired farmers based at the Jeparit Museum, the Jeparit Waterwatch Group has built an invaluable citizen science record of water quality across the region. Over three decades, volunteers have collected around 350 water quality records at each of six monitoring sites on the Wimmera River at Jeparit.

The group's monitoring network has extended from Antwerp along the Barringgi Gadyin (Wimmera River) to Gurru (Lake Hindmarsh) and has included farm dams, before the introduction of Wimmera Mallee Pipeline water, as well as more recent monitoring of the Yarriambiack Creek and its Hopetoun Lakes in the Mallee region. The data captures significant environmental changes over time, recording between three and six water quality measures at each sampling event. Salinity has been one of the most important indicators monitored. The data is available through the Waterwatch Victoria website (https://www.vic.waterwatch.org.au/).

Regular visits to the same monitoring locations have also allowed volunteers to observe and document seasonal changes in plants and wildlife, particularly birds. The group has raised concerns about environmental issues and supported local action on threats such as invasive prickly pear growing along the river and the spread of ash trees into wetlands. (52)

Northern Wimmera Plains Wetlands

The Hindmarsh area contains more than 280 wetlands, including the terminal lakes system of the Barringgi Gadyin (Wimmera River), which encompasses Gurru (Lake Hindmarsh), Ngalpakatia/Ngelpagutya (Lake Albacutya), the Ross Lakes and a range of smaller associated wetlands. Numerous additional wetlands are scattered throughout the surrounding landscape.

Other significant wetlands in the area include Pink Lake, Nhill Lake, Nhill Swamp, Mount Elgin Swamp and Yanac Swamp, which contribute to the region's ecological diversity and provide important habitat for native plants and wildlife.

Wetland Values

Environmental values

The Hindmarsh local area's wetlands support diverse ecosystems and provide important habitat for many native plant and animal species. Among these, Gurru (Lake Hindmarsh) and Ngalpakatia/Ngelpagutya (Lake Albacutya) are recognised for their outstanding ecological, hydrological and cultural values at both national and international levels.

Gurru (Lake Hindmarsh) and Ngalpakatia/Ngelpagutya (Lake Albacutya) are both recognised as nationally important wetlands. As key components of the Barringgi Gadyin (Wimmera River) terminal lakes system, they:

- Represent important wetland types within their biogeographic region.
- Play key ecological and hydrological roles in the functioning of the Barringgi Gadyin (Wimmera River)'s terminal wetland complex.
- Provide essential habitat and drought refuge for wildlife, supporting species during vulnerable life stages.
- Hold outstanding historical and cultural significancea.

In addition to meeting the national criteria above, Ngalpakatia/Ngelpagutya (Lake Albacutya) is recognised as a wetland of international importance under the Ramsar Convention because it:

- Regularly supports large populations of waterbirds, including more than 20,000 birds during wet periods.
- Supports at least 1% or more of the national population of native waterbirds, meeting key international conservation thresholds.
- Provides habitat for vulnerable, endangered or critically endangered species, contributing to regional biodiversity.
- Contains rare or representative wetland types in a near-natural condition.
- Supports migratory bird species protected under international conservation agreements. [3]

Bird surveys undertaken at Gurru (Lake Hindmarsh) between 2023 and 2025, following partial filling of the lake, further demonstrated its importance for threatened and migratory bird species. More than 40 waterbird species were recorded, including large numbers of individual birds. Notable sightings included the Australasian bittern (*Botaurus poiciloptilus*), great egret (*Ardea alba*), Australasian shoveler (*Spatula rhynochotis*), musk duck (*Biziura lobata*) and gull-billed tern *(Gelochelidon nilotica*), all of which are listed as threatened under Victoria's *Flora and Fauna Guarantee Act 1988*.

Two migratory shorebird species, the red-necked stint (*Calidris ruficollis*) and sharp-tailed sandpiper (*Calidris acuminata*), were also recorded. Both species are protected under international migratory bird agreements with Japan, China and Republic of Korea. [13]

Across the Hindmarsh local area, endangered and vulnerable vegetation communities occur around wetlands and along the Barringgi Gadyin (Wimmera River). These include Plains Grassland, Low Rises Woodland, Red Gum Swamp, Lignum Swampy Woodland and the Salt Paperbark Woodland/Samphire Shrubland Mosaic. Together, these communities contribute significantly to the region's biodiversity and ecological resilience. [6]

Cultural values

Many of the Wimmera's wetlands hold significant cultural value for First Nations Peoples, providing important resources, places for gathering and ongoing connections to Country.

Gurru (Lake Hindmarsh) and Ngalpakatia/Ngelpagutya (Lake Albacutya) are of particular cultural significance to the Wotjobaluk Nations Peoples. Gurru was part of an important traditional trading route, while the shores of Ngalpakatia/Ngelpagutya contain numerous cultural heritage sites, including shell middens, oven mounds, scarred trees, artefacts and culturally significant stories. Together, these places reflect a long and enduring connection to Country.

This connection is further demonstrated by a 2017 cultural heritage study at Ross Lakes, near Ngalpakatia/Ngelpagutya. The study confirmed the presence of previously recorded middens and scarred trees and documented many additional cultural sites, including dozens of newly identified scarred trees, a rare carved tree, clay balls and additional middens. The findings indicate that the Ross Lakes area was an important meeting place and has been used by First Nations Peoples over many generations, highlighting its ongoing cultural significance.

Social and recreational values

The Hindmarsh local area is characterised by expansive landscapes and a strong connection between waterways and community life. Gurru (Lake Hindmarsh) and Ngalpakatia/Ngelpagutya (Lake Albacutya) are highly valued by residents and visitors, particularly when high river flows and floodwaters fill the lakes. During these periods, they provide opportunities for water-skiing, fishing, camping, birdwatching and nature-based tourism. Even when water levels are low, both lakes remain popular destinations for visitors seeking to experience the region's natural and cultural landscapes.

Gurru (Lake Hindmarsh) is a particularly important recreation destination, attracting an estimated 6,700 participants in recreational activities during 2022-23 after partially filling. [9]

Nhill Lake is a key community asset, supporting a range of recreational activities including fishing, water-skiing, swimming, birdwatching and community events. Nearby Nhill Swamp is also a popular attraction, with its boardwalk providing opportunities for nature appreciation and wildlife observation.

Pink Lake, near Dimboola, is a major tourism drawcard for travellers along the Western Highway. The lake is well-known for its distinctive pink colour, created by naturally occurring pigment-producing algae.

Economic values

Waterbodies across the Hindmarsh area provide important economic benefits to local communities by attracting visitors and supporting recreation-based spending.

A study examining the social and economic value of water in the Wimmera and southern Mallee found that, during 2022-23, recreational use of Gurru (Lake Hindmarsh) contributed an estimated $80,100 to the local economy. Rainbow Lake contributed approximately $9,400, while Nhill Lake contributed around $6,500.

These economic benefits reflect spending by both local residents and visitors on activities such as recreation, tourism and community events, highlighting the importance of healthy and accessible waterways to social and economic wellbeing. [9]

Wetland condition

Index of Wetland Condition assessments were undertaken at several wetlands in the Hindmarsh area during 2009-10, including Gurru (Lake Hindmarsh), Ngalpakatia/Ngelpagutya (Lake Albacutya) and some smaller terminal lakes downstream.

The condition ratings of these wetlands were affected by changes to natural flow patterns caused by upstream river regulation and dry climate, which reduced their hydrology scores. At the time of assessment, all wetlands except Gurru (Lake Hindmarsh) were dry. Gurru (Lake Hindmarsh) recorded relatively poor water quality, which lowered its overall condition rating despite the presence of water in the lake. [14]

Threats and drivers of change

Hydrology - climate change and dry conditions

Climate change is increasing pressure on wetlands across the Hindmarsh local area by reducing the frequency, extent and duration of inundation. Many wetland plants, waterbirds and other wildlife depend on periodic flooding to complete their life cycles and less frequent filling events can lead to declines in habitat quality and biodiversity. The very wet years and major floods needed to replenish the region's wetlands are expected to become less common under a drier climate, increasing the vulnerability of the lower Barringgi Gadyin (Wimmera River)'s terminal lakes system.

Gurru (Lake Hindmarsh) typically receives water during periods of high flow and flooding in the Barringgi Gadyin (Wimmera River). However, for water to reach Ngalpakatia/Ngelpagutya (Lake Albacutya) and the terminal lakes further downstream, multiple consecutive wet years and substantial flooding are usually required.

Ngalpakatia/Ngelpagutya (Lake Albacutya) last filled in 1974 and retained water until 1983. Since then, only small inflows have reached the lake. Historical records indicate that the lake has experienced only four major filling events since 1920, highlighting the rarity of the conditions needed to sustain this internationally significant wetland. [3] As the climate becomes drier, such events are expected to occur even less frequently.

Weeds and pest animals

Invasive weeds, including boneseed, African boxthorn, bridal creeper, horehound, prickly pear, wheel cactus and wild olive, pose an ongoing threat to the health of riparian and wetland vegetation across the Hindmarsh local area. These species can outcompete native plants, reduce habitat quality and alter ecosystem function. Floodwaters, wildlife and other natural dispersal processes can also spread weeds, increasing the need for ongoing monitoring and management.

Rabbits remain a significant pest species, threatening native vegetation around lakes and wetlands. Their impacts are particularly evident in the sandy dune systems that border many wetlands, including Gurru (Lake Hindmarsh) and Ngalpakatia/Ngelpagutya (Lake Albacutya). Grazing and burrowing by rabbits can damage native plant communities, hinder natural regeneration and contribute to soil erosion.

Bed and bank modifications

Many wetlands across the Hindmarsh area have been altered. A 2017 Wimmera CMA study found that of the 281 recorded wetlands, around half were wholly or partly used for cropping. The study also identified 67 wetlands containing dams and 71 wetlands affected by drains or levees.

Only 95 wetlands were found to be largely unmodified. Most of these wetlands fill only during very wet years, making them important examples of the region's natural wetland systems and valuable refuges for native plants and animals. [15] Changes to wetland beds, banks and hydrology can affect wetland function, reducing habitat quality and altering natural water regimes.

Impacts of recreation

Recreational use of rivers, streams and wetlands can place pressure on these environments. Activities that increase access to waterways can contribute to wetland bed and buffer erosion, damage native vegetation, disturb wildlife habitat and lead to issues such as rubbish dumping and illegal firewood collection.

If not managed appropriately, these impacts can degrade the condition of waterways and wetlands, reducing their environmental, cultural and recreational values. Ongoing management and community awareness help minimise these pressures and protect these important natural assets.

Previous waterway strategy achievements

The *Wimmera Waterway Strategy 2014-2022* focused on protecting and enhancing high-value waterways across the Hindmarsh local area. In the lower Barringgi Gadyin (Wimmera River) and Outlet Creek, this included supporting landholders to manage livestock access, improving riparian vegetation condition and controlling rabbits and invasive weeds such as boneseed and bridal creeper.

Water for the environment played an important role in improving water quality, supporting native fish populations, maintaining instream vegetation and restoring more natural flow patterns. These actions delivered environmental, cultural, social, recreational and economic benefits.

During wetter years, inflows to Gurru (Lake Hindmarsh) created important habitat for a wide range of waterbird species. Wimmera CMA also monitored fish, bird and vegetation communities to evaluate environmental outcomes and inform future management.

At Ngalpakatia/Ngelpagutya (Lake Albacutya), Parks Victoria and Barengi Gadjin Land Council undertook extensive rabbit-control programs that significantly reduced impacts on native vegetation, enabling regeneration of nationally endangered Pine-Buloke Woodland communities.

Wimmera CMA also commissioned studies investigating the movement and behaviour of carp and salinity management in the lower Barringgi Gadyin (Wimmera River). Community-based monitoring has complemented this work. The Jeparit Waterwatch Group collected valuable citizen science data on salinity and water quality in the Barringgi Gadyin (Wimmera River) at Jeparit. Through regular monitoring, volunteers also recorded seasonal changes in waterway condition, flora and fauna and helped identify emerging environmental issues including invasive prickly pear cactus (*Opuntia* spp.), a Weed of National Significance and ash trees encroaching into wetlands. [16]

Barengi Gadjin Land Council, supported by Wimmera CMA, restored the culturally significant Ranch Billabong near Dimboola. Works included installing infrastructure to reconnect the billabong to the river, enabling controlled watering to support its ecological and cultural values.

Additional river protection and restoration works included the installation of floating vegetated pontoons upstream of Dimboola to help reduce riverbank erosion.

To improve drought resilience, Wimmera CMA and partner organisations commenced work to connect key drought-refuge pools in the lower Barringgi Gadyin (Wimmera River) to the Wimmera Mallee Pipeline. The pipeline connections will enable water for the environment to be delivered directly to refuge pools during prolonged dry periods, helping maintain water quality and reducing the risk of fish deaths when natural flows and water for the environment allocations are insufficient to reach this part of the river. Pipeline construction, led by GWMWater, is planned for 2026-27.

Stakeholder and community feedback

Wimmera CMA sought feedback from stakeholders and the community during the development of the Strategy and Plan. Participants identified a range of waterways in the Hindmarsh local area as being particularly important, including:

- Lower Barringgi Gadyin (Wimmera River)
- Jeparit and Dimboola weir pools
- Gurru (Lake Hindmarsh)
- Ngalpakatia/Ngelpagutya (Lake Albacutya)
- Ross Lakes
- Rainbow Lake
- Nhill Lake and Nhill Swamp
- Ranch Billabong
- Datchak Creek
- Wetlands across the region.

Key themes raised through consultation included:

- **Supporting recreation and community events:** Some stakeholders highlighted the importance of maintaining good water quality, reliable water availability and appropriately managed vegetation to support safe access, recreation and community events. Concerns were raised about the condition of the Barringgi Gadyin (Wimmera River), particularly the impacts of low flows, declining water quality and excessive instream vegetation on recreational use.
- **Protecting environmental and cultural values:** Some participants emphasised the importance of maintaining healthy waterways, protecting important species and habitats and recognising and protecting cultural values.
- **Developing clear management plans:** Local government stakeholders supported the development of dedicated management plans for the Dimboola and Jeparit weir pools and their surrounding riparian areas. Concerns were also raised about the ageing Jeparit weir, with stakeholders noting the need for replacement to maintain the social and economic benefits it provides to the community and to ensure safe operation for managing water flows and floods.
- **Managing invasive species:** Stakeholders identified invasive species as a continuing concern, particularly woody weeds such as boneseed, as well as carp, deer and feral cats. These species were seen as significant threats to native vegetation, wildlife and ecosystem health.
- **Supporting a Ramsar boundary extension:** Some stakeholders supported extending the Ramsar listing of Ngalpakatia/ Ngelpagutya (Lake Albacutya) to include Gurru (Lake Hindmarsh). This support was based on Gurru's ability to hold water more frequently and its importance for waterbirds, biodiversity and environmental, cultural, social and economic values.

Priority areas for management

The Strategy identified several priority areas in the Hindmarsh local area for targeted management and investment, including:

- Lower Barringgi Gadyin (Wimmera River)
- Jeparit and Dimboola weir pools
- Gurru (Lake Hindmarsh)
- Ngalpakatia/Ngelpagutya (Lake Albacutya)
- Outlet Creek
- Datchak Creek
- Wetlands with high environmental value
- Crow Swamp - pipeline watered wetland
- Pink Lake
- Nhill Lake and Swamp.

The location of these areas is shown in Figure 2. These priority areas were identified because of their high environmental, cultural, social and recreational values, as well as the opportunities and challenges associated with their ongoing management. Together, they represent the waterways and wetlands where management actions are expected to deliver the greatest benefits for the community and the environment.

Hindmarsh local area - Implementation plan

The following tables outline management actions for the Lower Barringgi Gadyin (Wimmera River) Heritage River and Flagship Waterway and the Northern Wimmera Plains Wetlands. 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 Hindmarsh 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 - Lower Barringgi Gadyin (Wimmera River) and terminal lakes system

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 lower Barringgi Gadyin (Wimmera River) and its terminal lakes system.

Water for the environment will play a central role in supporting native vegetation, waterbirds, fish and broader ecosystem processes, while complementary actions such as invasive species control, riparian vegetation protection, habitat restoration, infrastructure management and partnerships with Barengi Gadjin Land Council and other stakeholders including community groups will address key threats and improve long-term resilience. Many of these complementary management actions are being delivered through the Lower Wimmera River Flagship Waterway Project.

A particular focus of the plan is the protection and management of drought refuge pools, which provide critical habitat and safe havens for native fish, aquatic fauna and other species during extended dry periods. Protecting and enhancing refuge areas will help build the resilience of the system to climate change impacts, support species persistence and recovery, and improve the ability of the lower Barringgi Gadyin (Wimmera River) to withstand future environmental change.

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

Management theme	Table number
Enhancing riparian habitat, landscape connectivity and resilience.	Table 1
Water for the environment.	Table 2
Drought refuge area management.	Table 3
Ramsar site management.	Table 4
Supporting recreational access in balance with environmental and cultural values.	Table 5

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
Internationally important wetland, the Ngalpakatia/Ngelpagutya (Lake Albacutya) Ramsar site.
Nationally important wetlands, Ngalpakatia/Ngelpagutya (Lake Albacutya), Gurru (Lake Hindmarsh) and the Lower Barringgi Gadyin (Wimmera River).
Victorian Heritage River, the Lower Barringgi Gadyin (Wimmera River).
Strong cultural connections and values for Wotjobaluk Nations Peoples.
A **regionally significant native vegetation corridor** linking Little Desert and Wyperfeld National Parks.
Habitat for threatened species and ecological communities, including Australasian bittern, floodplain rustyhood, regent parrot, pink cockatoo, pine-buloke woodlands and riparian vegetation communities.
Important habitat for waterbirds and native fish.
High community value for recreation, tourism and amenity.
Economic values include tourism, events and water supply.

Key threats addressed by this implementation plan
Reduced flows and inundation from climate change, drought and altered water regimes.
Salinity impacts and **declining water quality**.
Invasive plants and pest animals.
Habitat degradation, including overgrazing and recreation impacts.
Impacts of floods and bushfire.
Declining waterway infrastructure, affecting delivery of water for the environment and river health.
Carp increasing instream turbidity and impacting aquatic plants and native fish.
Impacts of recreation and access, such as off-road vehicles, littering, and illegal firewood removal.

Enhancing riparian habitat, landscape connectivity and resilience

Table 1. 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
Lower Barringgi Gadyin (Wimmera River) and Outlet 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.	The extent of riparian habitat and condition of river red gum communities are maintained or improved. The connectivity of riparian habitat is maintained or improved, enabling the movement and dispersal of terrestrial species.	Support private landholders to protect and manage riparian areas on their properties by managing stock access and controlling weeds, foxes and rabbits.	27 management agreements. 60 km of fence. 180 ha of grazing access management.	**Wimmera CMA.** Private landholders.	*Lower Wimmera Flagship Waterway Project.* *Wimmera Proportion of Waterways Protected (2023).* *Wimmera Invasive Plant and Animal Management Strategy (2019).* *Heritage River Waterway Action Plan (2005).*	Part of the Lower Wimmera Flagship Waterway Project. A proportion of the identified action amounts are funded until June 2028.
			Enhance riparian vegetation by revegetating with native species.	90 ha of revegetation.	**Wimmera CMA.** Public land managers. Landcare groups. Private landholders.		
			Reduce the impact of problem invasive fauna on riparian vegetation by controlling rabbits.	2,760 ha of pest animal control.			
			Reduce the impact of weeds on riparian vegetation by controlling problem weeds.	4,560 ha of weed control (woody and non-woody).			
			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. Agriculture Victoria. Private landholders.		

Water for the environment

Table 2. Management actions associated with providing water for the environment to support instream and riparian 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
Lower Barringgi Gadyin (Wimmera River). Gurru (Lake Hindmarsh), Ngalpakatia/ Ngelpagutya (Lake Albacutya), Outlet Creek and other terminal lakes.	**MO2.** Priority areas have improved management to enhance habitat, landscape connectivity and resilience. **MO5.** Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values. **MO7.** Healthier waterways enable more On Country activities for First Nations Peoples.	The abundance, movement and species richness of native fish species is maintained or improved. The species richness and spatial extent of in-channel aquatic vegetation are maintained or improved and the abundance of aquatic vegetation is increased. The availability and quality of refuge habitats for native fish species are maintained or improved, with channel capacity preserved and sediment accumulation minimised. Riparian habitat extent and the condition of river red gum communities are maintained or improved. Geomorphic habitat quality is maintained or improved through the preservation of channel form, clean substrates and an open stream bed. The connectivity of instream habitat between river reaches is maintained or improved, enabling the movement and dispersal of native fish. Where possible, salinity and dissolved oxygen levels are effectively managed to reduce risks to native fish, instream and riparian vegetation and recreation and amenity values. Management of water for the environment achieves the waterbird outcomes identified in the environmental water management plan.	Develop annual seasonal watering proposals for the Barringgi Gadyin (Wimmera River).	10 proposals (comprised of 1 proposal annually).	**Wimmera CMA.** GWMWater. Victorian Environmental Water Holder. Commonwealth Environmental Water Holder. Hindmarsh Shire Council.	*Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024).* Annual seasonal watering plans.	Continuation of work under the previous regional waterway strategy.
			Deliver water for the environment to the lower Barringgi Gadyin (Wimmera River) in line with the Victorian Environmental Water Holder's annual seasonal watering plans.	The volume (ML) of water delivered and extent of river watered depends on annual watering entitlements.			

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
Lower Barringgi Gadyin (Wimmera River). Dimboola and Jeparit weir pools.	**MO5.** Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values.	Where possible, salinity and dissolved oxygen levels are effectively managed to reduce risks to native fish, instream and riparian vegetation and recreation and amenity values. Where flow conditions can be influenced, the frequency, duration and severity of hypoxic events is managed to reduce risks to native fish and recreation and amenity values. Where possible, nutrient levels are effectively managed to reduce the risk of blue-green algae blooms impacting native fish, recreation and amenity values.	If water quality poses an emergency or unexpected risk of blue green algae or fish deaths, provide water for the environment to improve water quality in consultation with the Victorian Environmental Water Holder, if sufficient water allocations are available.	As needed.	**Wimmera CMA.** **Victorian Environmental Water Holder.**	*Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024).* Annual seasonal watering plans.	Continuation of approach under the previous regional waterway strategy.
Lower Barringgi Gadyin (Wimmera River). Dimboola and Jeparit weir pools.	**MO5.** Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values.	Where possible, salinity and dissolved oxygen levels are effectively managed to reduce risks to native fish, instream and riparian vegetation and recreation and amenity values in the Lower Barringgi Gadyin (Wimmera River) and weir pools.	Plant native vegetation in areas where saline groundwater is close to the surface to reduce the impact of saline groundwater entering the Barringgi Gadyin (Wimmera River) and floodplain areas.	To be determined.	**Wimmera CMA.** **Barengi Gadjin Land Council.**	*Wimmera Saline Pools Investigation.*	New action.

Drought refuge area management

Table 3. Management actions associated with managing drought refuge pool management, including providing 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
Lower Barringgi Gadyin (Wimmera River). Drought refuge areas at: • Lochiel • Tarranyurk • Arkona • Antwerp.	**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.	During and after dry conditions and drought, waterway habitat, environmental values including native fish, riparian and aquatic vegetation, frogs and waterbirds and recreational values are maintained at drought refuge areas.	Deliver water for the environment to drought refuge pools during dry periods, in line with the Victorian Environmental Water Holder's annual seasonal watering plans.	4 drought refuges sites in the lower Barringgi Gadyin (Wimmera River) connected to the Wimmera Mallee Pipeline. The volume (ML) of water delivered and number of pools receiving water depends on river conditions and annual watering entitlements.	**Wimmera CMA.** Victorian Environmental Water Holder. GWMWater. Barengi Gadjin Land Council.	*Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024).* Annual seasonal watering plans. *Wimmera CMA's Dry Conditions Action Plan (2025).*	New action.
			Prepare site management plans for drought refuge areas, identifying measures to enhance habitat and reduce threats to environmental values, complementing provision of water for the environment.	4 drought refuge areas in the lower Barringgi Gadyin (Wimmera River) connected to the Wimmera Mallee Pipeline.	**Wimmera CMA.** Victorian Environmental Water Holder. GWMWater. Barengi Gadjin Land Council.	*Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024).*	New action.

Ramsar site management

Table 4. Management actions associated with maintaining the values of the Ngalpakatia/Ngelpagutya (Lake Albacutya) Ramsar site.

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
Ngalpakatia/ Ngelpagutya (Lake Albacutya) and adjoining waterways including Outlet 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 and woodland vegetation is maintained and improved so that Lake Albacutya continues to provide habitat in dry phases and, when inundated, supports water-dependent species. Fringing woodland habitat continues to provide habitat and refuge for migratory and resident woodland bird species, including regent parrot and pink cockatoo. Endangered Pine-Buloke Woodland condition and regeneration are maintained or improved, supported by reduced rabbit impacts, decreased erosion risk and enhanced dune stability.	Reduce the impact of weeds on riparian vegetation by controlling priority and problem weeds including boxthorn, boneseed, bridal creeper, melons and other new and emerging weeds.	500 ha (annually).	**Parks Victoria.** Barengi Gadjin Land Council. Wimmera CMA.	*Lake Albacutya Ramsar Site Annual Action Plan.* *Lake Albacutya Ramsar site Ecological Character Description (2010).* *Wimmera Regional Land Partnerships Program Action Plan (2021).* *Wimmera Invasive Plant and Animal Management Strategy (2019).*	Funded under the Victorian Waterway Health Ramsar Program until June 2028. Continuation of work under the previous regional waterway strategy.
			Reduce the impact of invasive fauna on Pine-Buloke woodlands and soil and dune stability by controlling rabbits.	250 ha (annually).			
Gurru (Lake Hindmarsh).	**MO2.** Priority areas have improved management to enhance habitat, landscape connectivity and resilience.	Foundational activity informing future management decisions and conservation priorities for Gurru (Lake Hindmarsh) and the broader lower Barringgi Gadyin (Wimmera River) and terminal lakes system, including Ngalpakatia/Ngelpagutya (Lake Albacutya) Ramsar site.	Assess Gurru (Lake Hindmarsh) to inform future management and conservation priorities across the lower river and terminal lakes system, including its ecological relationship with the Lake Albacutya Ramsar site, and whether expansion of the Ramsar boundary is warranted.	1 investigation.	**Wimmera CMA.** Parks Victoria. Barengi Gadjin Land Council.	*Wimmera Regional Catchment Strategy (2021).*	Continuation of previous work under the Regional Catchment Strategy.

Supporting recreational access in balance with environmental and cultural values

Table 5. 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
Dimboola weir pool.	**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.	Collaborate to implement the *Wimmera River Waterway Management Plan Dimboola (2021).*	1 plan implemented.	**Hindmarsh Shire Council.** Wimmera CMA. Barengi Gadjin Land Council. DEECA - public land management. Parks Victoria. GWMWater. Recreational user groups.	*Wimmera River Waterway Management Plan Dimboola (2021).*	Continuation of existing arrangements.
		Erosion risks associated with ski-boat use are minimised where practical, supporting sustainable recreation while protecting ecological values, cultural heritage and river health.	Inspect and collaborate with partners to maintain the effectiveness of erosion control measures installed to reduce bank erosion in the Dimboola weir pool, including floating wetlands and a retaining wall.	Erosion reduction measures maintained.	**Wimmera CMA** Hindmarsh Shire Council. Barengi Gadjin Land Council. Recreational user groups.	*Lower Wimmera Flagship Waterway Project.*	Part of the Lower Wimmera Flagship Waterway Project. A proportion of the identified action amounts are funded until June 2028.
Jeparit weir pool.	**MO6.** Waterways identified as high priority for recreation and amenity provide enhanced recreational opportunities and community benefits, while minimising	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,	Develop a management plan for Jeparit weir pool.	1 management plan.	**Hindmarsh Shire Council.** Wimmera CMA. Barengi Gadjin Land Council. Parks Victoria. GWMWater. Recreational user groups.		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
	impacts on their environmental values.	relaxation, cultural activities and connection with nature.	Investigate replacement options for Jeparit weir to allow for the safe management of flows and floodwater in the Barringgi Gadyin (Wimmera River) at Jeparit while maintaining the social and economic values of Jeparit weir pool.	1 investigation.		*Redevelopment Overview - Jeparit Weir Replacement. Hindmarsh Shire Council (2026).* [17]	Building on investigations by Hindmarsh Shire Council.
Lower Barringgi Gadyin (Wimmera River). Dimboola and Jeparit weir pools.	**MO1.** Ongoing collaboration and two-way learning in waterway planning and management, supporting self-determination and strengthening partnerships with First Nations Peoples. **MO6.** Waterways identified as high priority for recreation and amenity provide enhanced recreational opportunities and community benefits, while minimising impacts on their environmental values.	Tree-fall risks and instream vegetation growth are collaboratively assessed and managed with key stakeholders to balance access for recreation with sustainable, environmentally and culturally responsible river access and use.	Collaboratively assess and manage tree-fall risks and instream vegetation growth with key stakeholders and in line with permit processes and requirements.	Dependent on the number requiring assessment.	**Wimmera CMA.** **Barengi Gadjin Land Council.** DEECA - public land management. Parks Victoria. Hindmarsh Shire Council. Recreational user groups.	Works on Waterways Permit processes. Cultural heritage processes.	Continuation of existing arrangements.

Implementation plan - Northern Wimmera Plains Wetlands

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.

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
Reducing threats to wetlands and maintaining values.	Table 6
Water for the environment and complementary measures supporting drought refuge areas and wetland values.	Table 7

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
Provide **wetland habitat and drought refuges** in a largely dry agricultural landscape.
Wimmera Mallee Pipeline Wetland, **Crow Swamp, provides a drought refuge area** supporting native plants and animals.
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.

Reducing threats to wetlands and maintaining values.

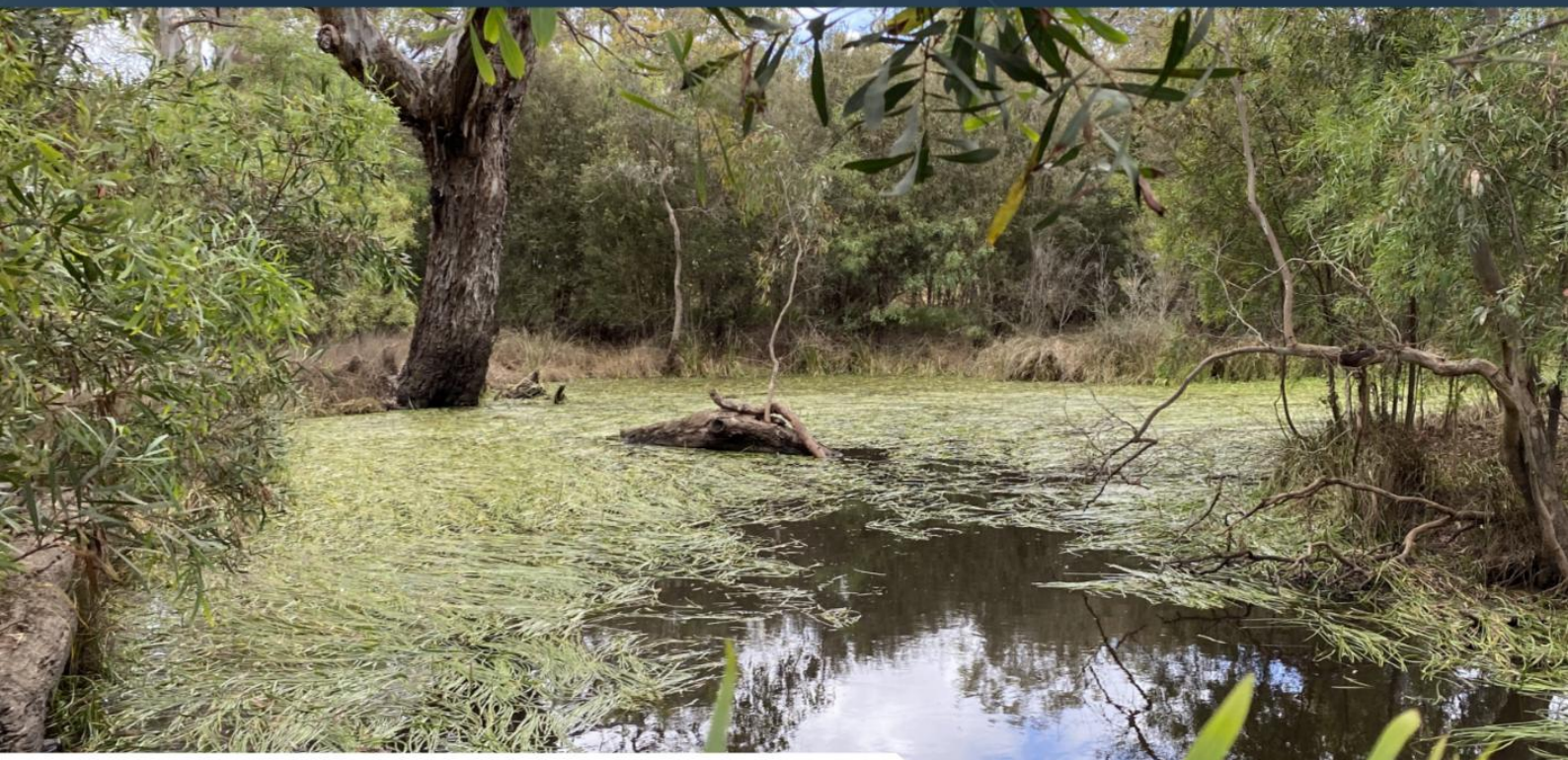
Table 6. Management actions associated with reducing threats to wetlands with high environmental value and maintaining environmental and other values.

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.
			Support private landholders to protect and manage wetlands on their properties by controlling stock access, reducing the impact of weeds and pest animals, and maintaining natural hydrology.	To be determined based on funding.	**Wimmera CMA.** Trust for Nature. Private landholders.	*Trust for Nature's Statewide Conservation Plan 2021-2030.* *Wimmera Wetland Asset Strategy.*	Continuation of work under the previous regional waterway strategy.
Public wetlands including Gurru (Lake Hindmarsh).	**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.	50 ha (annually).	**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 (annually).			
			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.		

Water for the environment and complementary measures supporting drought refuge areas and wetland values

Table 7. 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 Crow Swamp. (Pipeline wetlands are also present in the Upper Catchment and Yarriambiack and Buloke 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, including Crow Swamp.	10 proposals (comprised of 1 proposal annually).	**Wimmera CMA.** GWMWater. Victorian Environmental Water Holder. Hindmarsh 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 Wetland, Crow Swamp, 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.		
	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, including Crow Swamp.	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.



HORSHAM

IMPLEMENTATION PLAN

VICTORIA State Government Australia

Wimmera CMA

Horsham local area - overview

About the Horsham local area

The Horsham local area is a central hub for the Wimmera region and includes its largest centre, Horsham (see Figure 4). Yarriambiack Creek forms the north-eastern boundary, while the Gariwerd (Grampians National Park) lies to the south.

The area covers 395,870 hectares and is home to around 20,000 residents. [18] Land use is dominated by dryland cropping (66.5%), with 9% set aside for nature conservation.

Rivers and streams

The Horsham local area has numerous important waterways. It includes the mid or central stretch of the Barringgi Gadyin (Wimmera River), fringed by riparian vegetation which meanders through an agricultural landscape and provides a significant social, economic, cultural and environmental asset to the region.

Tributary streams, Golton and Mount William Creeks, join the river north of the Gariwerd (Grampians National Park) and the river winds between large lakes south-east of Horsham. Before reaching Horsham, distributary streams Dunmunkle and Yarriambiack Creeks branch north off the Barringgi Gadyin (Wimmera River) flowing through the Yarriambiack and Buloke local area.

The Barringgi Gadyin (Wimmera River) receives inflows from Burnt Creek at Horsham and MacKenzie River and Norton Creek join the river downstream of Horsham. The waterway then heads northward towards Gurru (Lake Hindmarsh) in the Hindmarsh local area.

The MacKenzie River, arising in the Gariwerd (Grampians National Park), supports the last remaining Wimmera population of platypus (*Ornithorhynchus anatinus*) as well as native fish and crayfish, while Burnt Creek supports the threatened western swamp crayfish (*Gramastacus insolitus*) and the most southern known population of the Peron's Tree Frog (*Litoria peronii*).

Small streams also feature in the landscape. These include Station and Mount Talbot Creeks that flow into Lake Toolondo. Natimuk Creek flows into Natimuk Lake and onto Lake Wyn Wyn, both nationally significant wetlands listed on the Directory of Important Wetlands in Australia.

Wetlands

The Horsham local area has approximately 540 wetlands including saline lakes, shallow seasonal wetlands and deep, more permanent freshwater lakes. In the south and west these are diverse with a high density of wetlands – most are on private land. Many provide significant habitat and recreational opportunities.

The Natimuk-Douglas Chain of Lakes is a unique series of lakes hosting nationally significant wetlands, many of which are saline and provide habitat for wetland birds including endangered migratory species.

Taylors Lake is a key water storage which has important roles in stock and domestic water supply via the Wimmera Mallee Pipeline and in providing the Barringgi Gadyin (Wimmera River) with water for the environment. Other large lakes, such as Green Lake, are significant for managing water quality within the water supply headworks system and provide environmental, recreational, social and cultural values. Lake Toolondo is a significant recreational fishery when holding water.

Most wetlands in the area are isolated among extensive agricultural land with varying levels of ecological function due to compounding threats.

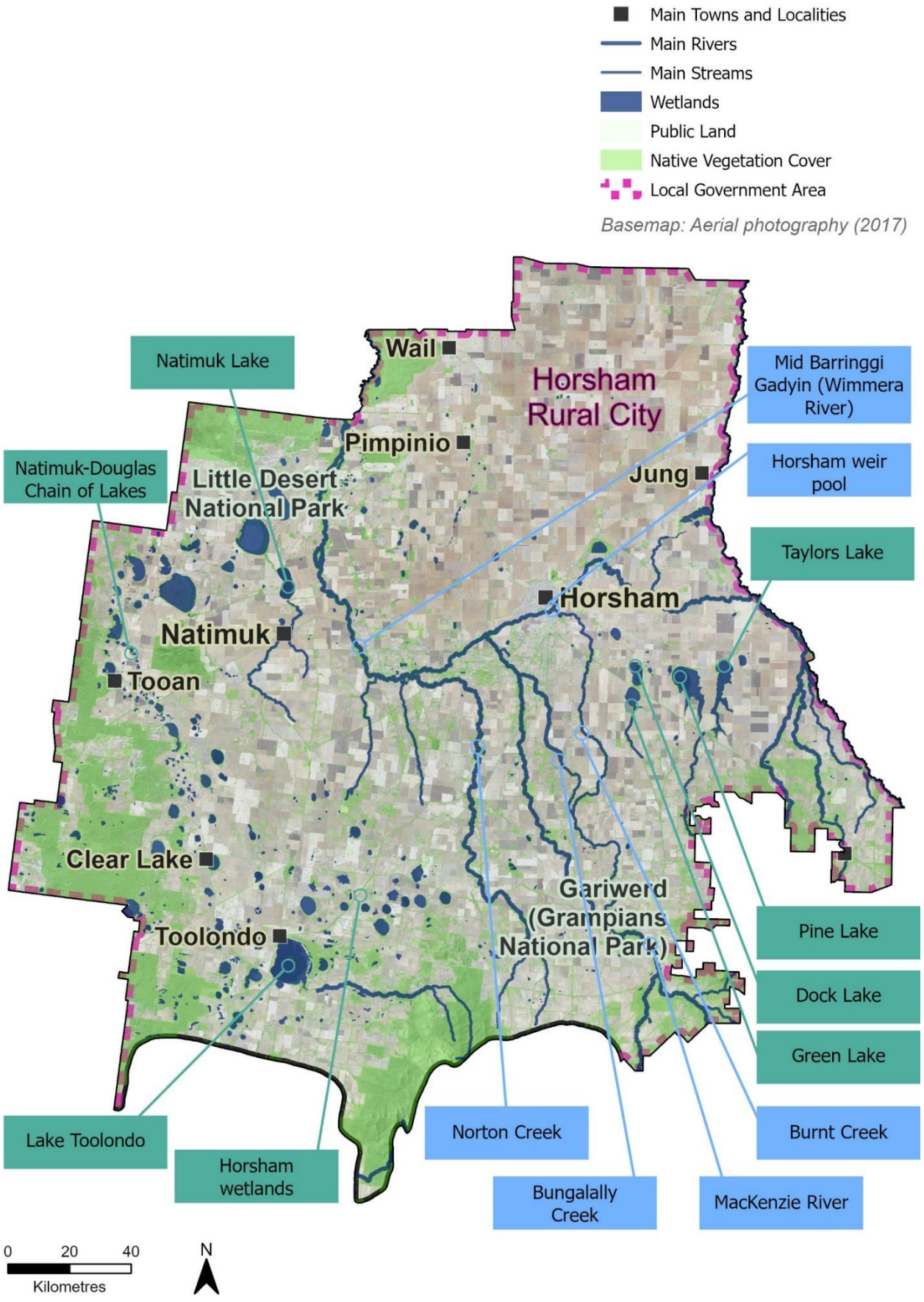


Figure 4. Horsham local area and key waterway assets. Information boxes are colour-coded by feature type: blue for rivers and streams and teal for wetlands.

Mid-Barringgi Gadyin (Wimmera River), MacKenzie River and Burnt and Bungalally Creeks

River and stream values

Environmental values

Boggy Creek, Golton Creek and upstream sections of MacKenzie River were in excellent natural condition in the decade leading up to the Strategy. [10]

Platypus *(Ornithorhynchus anatinus)* were widespread in parts of the Wimmera catchment before the Millenium Drought, but researchers now believe they are restricted to the MacKenzie River. There are occasional anecdotal reports of sightings elsewhere, but none up to 2025 had been confirmed.

River blackfish (*Gadopsis marmorata*) have also been a conservation focus in the MacKenzie River and Burnt Creek system. Blackfish were also widespread prior to the Millenium Drought and are now severely restricted.

Further waterway species, present as of 2024 surveys in the Horsham local area, included southern pygmy perch, flatheaded gudgeon *(Philypnodon grandiceps) and* freshwater catfish *(Tandanus tandanus).* Annual surveys and Horsham Fishing Competition results have indicated that European carp (*Cyprinus carpio*) numbers in the Barringgi Gadyin (Wimmera River) reduced and then stabilised. This is likely to be because of healthy native fish populations due to fish stocking, water for the environment, carp removal programs and water quality efforts.

Terrestrial species of the region's waterways listed under the *Flora and Fauna Guarantee Act 1988* include the vulnerable growling grass frog *(Litoria raniformis),* endangered southern toadlet (*Psuedophryne seminarmorata*) and vulnerable Australasian shoveler (*Spatula rhynochotis*). Some critically endangered species include the barking owl (*Ninox connivens connivens*), bush stone-curlew (*Burhinus grallarius*), curlew sandpiper (*Caldris ferruginea*) and black falcon (*Falco subniger*). [19] Threatened and non-threatened species present are not limited to this list.

Riparian vegetation in the Horsham local area mainly consists of threatened Ecological Vegetation Classes. The Barringgi Gadyin (Wimmera River) supports extensive Riverine Grassy Woodlands (vulnerable), Riparian Woodlands (vulnerable) and Riverine Chenopod Woodlands (endangered). Norton, MacKenzie and Burnt creeks support Plains Woodlands (endangered), Creekline Sedgy Woodlands (endangered) and Sand Ridge Woodlands (endangered). [6]

Cultural values

First Nations communities maintain deep, enduring connections to land and water across the Horsham local area. The creation story of the Barringgi Gadyin (Wimmera River) continues to be celebrated by Barengi Gadjin Land Council and there are significant sites and Special Places associated with the river in Horsham.

Social and recreational values

The Barringgi Gadyin (Wimmera River), running through the heart of the rural city of Horsham and downstream to Dimboola, has a profound influence on the general appeal and liveability of these centres. It has long been the subject of enhancement and development. It qualifies as a significant natural asset for promoting tourism, which attracts visitors for major annual events such as an annual Labour Day weekend fishing competition. The river has for many years also provided the backdrop for other major festivals, celebrations and sporting events. Many people regularly gravitate to the river, which borders extensive parkland reserves and residential areas, for passive recreation such as walking, running, cycling and picnicking. Camping facilities are also available.

Horsham Rural City Council has been implementing its Wimmera Riverfront Activation Project as a part of the first stage of its 20-year City to River Masterplan. This is designed to enhance the attraction of the river to residents and visitors with recreation spaces and opportunities.

Socio-economic research has shown that participation at the Horsham weir for recreation has increased from 78,300 participants in 2016-17 to over 84,000 in 2018-19 and 2019-20. This is likely to be attributed to the additional walking tracks and boating facilities that have been installed and the emergence of new activities such as the Horsham Park Run which uses the new walking tracks.

Recreational fishing is popular on the Barringgi Gadyin (Wimmera River). Target species include exotic redfin (*Perca fluviatilis*), brown and rainbow trout (*Salmo trutta and Oncorhynchus mykiss)* and introduced Murray-Darling System natives golden perch (*Macquaria ambigua*), Murray cod (*Maccullochella peelii peelii*), freshwater catfish (*Tandanus tandanus*) and silver perch (*Bidyanus bidyanus*). Yabbies (*Cherax destructor) are also a target species.* [20]

Seasonal duck hunting is permitted along specific sections of Barringgi Gadyin (Wimmera River) and on public land in accordance with Game Management Authority guidelines.

Economic values

The Barringgi Gadyin (Wimmera River) attracts visitors to Horsham's annual fishing competition and other fishing events downstream in Hindmarsh local area. The competition regularly attracts over 1,000 people from across the state and beyond. [21]

Barringgi Gadyin (Wimmera River), with its close proximity to Horsham's Central Business District, major reserves and gardens and residential areas, is integral to health, liveability and promotional activities of the regional city and downstream towns.

River and stream condition

The 2010 Index of Stream Condition assessment rated rivers and streams in the Horsham local area as being in moderate to good condition. Boggy Creek and Golton Creek, were rated as being in excellent condition, including upper section of MacKenzie River. (10)

Water quality

There has been a concerted effort to improve runoff water quality of the Barringgi Gadyin (Wimmera River) in Horsham over the past 10 to 15 years, with more to do. Most of the Barringgi Gadyin (Wimmera River)'s water quality issues stem from erosion in the upper catchment.

The river at Horsham regularly fails to meet water quality targets in Victoria's Environment Reference Standards for phosphorus, nitrogen, turbidity and pH. Despite this, the water quality in Horsham's weir pool has been good enough to prevent algal blooms and allow for recreation. This has been assisted by water flows for the environment.

Threats and drivers of change

Hydrology - Climate change and dry conditions

Climate change is impacting on water availability and flows in Horsham local area waterways.

Horsham residents and businesses as well as threatened wildlife rely on Lake Wartook and the MacKenzie River system for water supply. Domestic supply is essential for Horsham, but species such as platypus and river blackfish and their aquatic communities also need water to survive. Wimmera CMA and GWMWater work together to balance supply needs.

Completion of the Wimmera Mallee Pipeline by 2010 created more efficient means of water transport than previous open channels in a drying climate, however drying conditions are magnified by higher demands on Wartook Reservoir for water supply for Horsham and the environment. This means that during dry times, the authorities' ability to supply water can be compromised, leading to a potential trade-off in social, economic and environmental outcomes.

Weeds and pest animals

Horsham's rivers provide essential corridors for wildlife but can also be vectors for invasive plants and animals. These areas require ongoing management by land managers to ensure they continue to maintain their values.

A Wimmera Invasive Plant and Animal Strategy outlines the highest priority areas for the Horsham local area being the MacKenzie River. It is a priority for protecting and improving riparian vegetation, controlling bridal creeper *(Asparagus asparagoides)* and other weeds and increased rabbit control to prevent stream-bank erosion and impacts on native vegetation. (22)

Carp *(Cyprinus carpio)* and mosquitofish *(Gambusia holbrooki)* impact on water quality as well as native fish populations. This will require ongoing maintenance.

Impacts of recreation

In Horsham local area, recreational impacts on rivers and streams include inappropriate off-road vehicle use, which can promote bank and creek-bed erosion and be a significant threat to Wimmera and MacKenzie Rivers.

Access for recreational angling can impact bankside vegetation and access tracks. Significant work has occurred in the region in partnership with angling groups to improve access and prevent and minimise impacts in high use areas.

Horsham wetlands including Natimuk-Douglas Chain of Lakes

Wetland values

Environmental values

Many lakes support high numbers and diversity of waterbird species when holding water, including Natimuk Lake, Dock Lake and saline lakes in the Natimuk-Douglas Chain of Lakes.

Survey observations from 2024 included more than 16,700 waterbirds from 26 species at Lake Natimuk and 2,700 waterbirds from 16 species at Dock Lake. (23)

Monthly surveys of Dock Lake during 2024-25 identified three palearctic migratory species including the Red-necked Stint (*Calidris ruficollis*), Sharp-tailed Sandpiper and Bar-tailed Godwit – all which are listed in international migratory bird agreements. A further two species identified include the Freckled Duck and Australasian Shoveler which are listed as threatened by the *Flora and Fauna Guarantee Act*. Over the period, 40 different species of wetland birds were recorded at Dock Lake.

Surveys of the Natimuk Douglas Chain of Lakes identified the marsh sandpiper (*Tringa stagnatilis*), red-necked stint and common greenshank *(Tringa nebularia)*. These are all listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act*, Japan-Australia Migratory Bird Agreement, China- Australia Migratory Bird Agreement and Republic of Korea-Australia Migratory Bird Agreement. (24; 25; 26)

EPBC-listed species at Green Lake recorded since 2000 include the curlew sandpiper and growling grass frog. (27)

Threatened Ecological Vegetation Classes are also supported by local wetlands. This includes Plains Savannah (endangered), Ridged Plains Mallee (endangered), Plains Woodland (endangered) and Low Rises Woodland (endangered) around lakes in the northern reaches of the Natimuk-Douglas Chain of Lakes. Many endangered Brackish Wetlands make up these lakes. Significant Shallow Sands Woodlands surrounds Mitre Lake (vulnerable).

Southern wetlands of the Natimuk-Douglas Chain of Lakes and other areas of the local area further support Red Gum Swamp (endangered), Aquatic Herbland (endangered) and Cane Grass Wetland (vulnerable). Significant Damp Sand Herb-rich Woodland is also significant around Lake Toolondo. (6)

Cultural values

First Nations communities retain a strong connection between the land and water. There are many scar trees and artefact scatters associated with waterways and woodlands. Water was a valued aspect of for survival and culture for First Nations Peoples, evident by the array of artefacts beside waterways across the region. Complex fish traps at Lake Toolondo are an example. (28)

Social and recreational values

Lakes including Toolondo, Green, Taylors and Natimuk are important assets for water-based recreation in the region.

Periods of limited inflow mean Natimuk, Toolondo and Green Lake fill intermittently and can have insufficient water levels for some recreational activities. When holding enough water, these lakes are important areas for fishing, boating and swimming in addition to passive activities including picnicking, camping, bird watching and walking. As an important water supply storage, Taylors Lake regularly holds enough water to support water-based recreation.

Smaller seasonal wetlands have restricted or limited water-based recreational opportunities but are still valued for their nature-based recreation experiences such as bird-watching.

Economic values

Some wetlands in the Horsham local area add high economic value to the region via tourism, recreation and acting as a water storage.

Wetlands with the greatest economic contribution, via visitor participation, include Green Lake, Taylors Lake and Lake Toolondo. Total economic contributions were estimated to be $335,000 in 2022-23. Taylors Lake alone had the greatest contribution, estimated at $247,000. (9)

Wetland condition

Native vegetation

Local wetlands support threatened Ecological Vegetation Communities. This includes Plains Savannah (endangered), Ridged Plains Mallee (endangered), Plains Woodland (endangered) and Low Rises Woodland (endangered) around lakes in the northern reaches of the Natimuk-Douglas Chain of Lakes. Many endangered Brackish Wetlands are part of this system.

Significant Shallow Sands Woodlands surround Mitre Lake (vulnerable) and a community of Salt Paperbark (*Melaleuca halmaturorum)*, listed under the *Flora and Fauna Guarantee Act 1988*, exists at Lake Wyn Wyn. (29)

Southern wetlands of the Natimuk-Douglas Chain of Lakes and across the remaining local area, further support Red Gum Swamp (endangered), Aquatic Herb land (endangered) and Cane Grass Wetland (vulnerable). Significant Damp Sand Herb-rich Woodland is also significant around Lake Toolondo. (6)

Water quality

The recreational use of some of the local area's significant water bodies is influenced by several factors. Green Lake is frequently impacted by blue-green algae. When it is clear of algal blooms its value increases. For example, in 2016-17 over 10,000 participants used Green Lake compared to 2018-19 and 2019-20 when the participation was 2,000 and 1,700 due to algae outbreaks.

Recreation

Taylors Lake continues to maintain a healthy participation rate as it retails a reliable volume of water for recreation and its water quality is relatively good. Toolondo Reservoir's participation rates are dependent on water levels. Since 2017-18 participation rates dropped from 3,340 to 358 in 2019-20 due to declines in water levels and quality.

Threats and drivers of change

Hydrology - Climate change and dry conditions

A drying climate threatens water availability and quality in wetlands used for social, cultural, economic and environmental values.

Excess nutrients from agricultural runoff promotes algal blooms which particularly affect recreational use of larger lakes.

Weeds and pest animals

Invasive species, including carp, are a major problem for native threatened aquatic species. Carp are linked to reduced water quality and are particularly problematic when they enter recreational lakes, competing with native fish and popular recreational angling species. In the past, this has particularly affected Lake Toolondo, with authorities collaborating to reduce carp impacts.

Modifications

Of the local area's 538 wetlands, 170 (32%) are free from modifications such as dams, drains, cropping or levees. In 2017, 140 wetlands were cropped compared to 75 in 2004 indicating there is a continued impact on wetlands. Natural water flow was modified as a result, re-directing water into human-made dams, often excavated into the wetland bed.

Many wetlands do not contain water for as long as they once did. For example, Lake Natimuk has been shown to be at risk of a changed hydrologic regime due to man-made modifications, climate change and improved agricultural practices to retain soil moisture, thereby reducing runoff to the lake's catchment.[15]

Impacts of recreation

Due to the high use of wetlands for recreation, it is important to manage access for safety reasons and to ensure it does not impact on biodiversity, water quality and amenity of natural areas. For example, power boating can result in shoreline-erosion and affect the quality and depth of lakes. Improving access and sustainable visitation to waterways has been a focus for Wimmera CMA, councils and community groups.

Future opportunities

Increasing the resilience of waterways in a drying climate has been a priority for recent management.

With the Wimmera Mallee Pipeline being an invaluable asset, Wimmera CMA is investigating opportunities for piping water to drought refuges in waterways to help use water efficiently to maintain environmental values during extreme dry periods when there are low natural flows and water for the environment allocations. Investigations include the viability of introducing piped water to selected drought refuge pools along Burnt Creek and MacKenzie River.

Regular trapping surveys and eDNA sampling of MacKenzie River has assisted in monitoring platypus presence and informed environmental-water management.

A Wimmera CMA River Blackfish Recovery Project, which has included the release of hatchery-bred and translocated fish in MacKenzie River and Burnt Creek, has relied heavily on environmental-water allocations and management, which would be further benefited by the piped drought refuges project. The blackfish project included a world first with aquarists breeding Wimmera-sourced blackfish under controlled hormone-induced conditions.

Target control measures of invasive carp *(Cyprinus carpio*) with netting and electrofishing has also occurred in Horsham local area. In 2025, electrofishing and netting of the noxious species occurred in streams across the catchment including MacKenzie River and Burnt Creek.

Stakeholder and Community Feedback

During development of the Strategy and Plan, Wimmera CMA invited input from stakeholders and the community. Participants from the Horsham local area identified the following waterways as particularly important:

- Barringgi Gadyin (Wimmera River)
- Horsham weir pool
- MacKenzie River
- Burnt Creek
- Bungalally Creek
- Norton Creek
- Natimuk Lake and Natimuk Creek
- Green Lake
- Taylors Lake
- Lake Toolondo
- Dock Lake
- Boundary Swamp
- Mitre Lake

Key themes raised through consultation included:

- **Drought and water security challenges:** Stakeholders expressed concern about the impacts of drought, a drying climate and increasing pressure on water resources. Many emphasised the importance of maintaining reliable water supplies for towns, agriculture and industry, while ensuring sufficient water remains available to support healthy waterways and water-dependent species such as platypus.
- **Exploring integrated water management opportunities:** Some stakeholders supported investigating integrated water management approaches and alternative water sources to reduce pressure on existing supplies. Maintaining long-term water availability and balancing environmental, community, agricultural and industrial water needs were common priorities.
- **Supporting recreation and managing visitor impacts:** Stakeholders highlighted the importance of maintaining and improving access, facilities and infrastructure at key recreational sites, including the Horsham weir pool. There was also a strong interest in managing recreational activities appropriately to minimise impacts on waterway health and environmental values.
- **Managing invasive species and building community stewardship:** Stakeholders identified pest plant and animal management as an ongoing priority and supported continued efforts to control species that threaten waterway and wetland values. Many also highlighted the importance of community education, engagement and stewardship programs to build understanding of waterway values and encourage community involvement in their protection and management.

Priority areas for management

The Strategy identified several priority areas in the Horsham local area for targeted management and investment, including:

- Mid-Barringgi Gadyin (Wimmera River)
- Horsham weir pool
- MacKenzie River
- Burnt Creek
- Wetlands with high environmental value
- Natimuk-Douglas Chain of Lakes
- Wetlands with high social and economic value, including:
    - Taylors Lake
    - Natimuk Lake and Creek
    - Green Lake

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..



An environmental flow in Barringgi Gadyin (Wimmera River) at Campbells Bridge.

Horsham local area – Implementation plan

The following tables outline management actions for the Mid Barringgi Gadyin (Wimmera River), MacKenzie River, Burnt and Bungalally Creeks and Horsham wetlands including the Natimuk-Douglas Chain of Lakes. 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 Horsham 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 - Mid Barringgi Gadyin (Wimmera River)

The Implementation Plan for the Mid Barringgi Gadyin (Wimmera River) outlines an integrated program of planning for and managing provision of water for the environment and complementary waterway management actions designed to protect and enhance the river's environmental, cultural, economic and social values. The Plan brings together the delivery of water for the environment with on-ground management activities to support healthy river ecosystems and improve the long-term resilience of the system.

Water for the environment will contribute to maintaining and restoring native vegetation communities, supporting waterbirds and native fish populations, and sustaining critical ecological processes. Complementary actions, including invasive species control, riparian vegetation protection, habitat restoration, infrastructure management, and collaborative partnerships with Barengi Gadjin Land Council, community groups and other stakeholders, will address key threats and strengthen river health outcomes.

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

Management theme	Table number
Enhancing riparian habitat, landscape connectivity and resilience.	Table 8
Water for the environment.	Table 9
Supporting recreational access in balance with environmental and cultural values.	Table 10
Integrated water management	Table 11

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
Strong cultural connections and values for Wotjobaluk Nations Peoples.
Native vegetation corridor of generally moderate to good condition.
Habitat for threatened species and ecological communities, including Australian shoveler, freshwater catfish and riparian vegetation communities.
Important habitat for waterbirds and native fish.
High community value for recreation, tourism and amenity.
Economic values include tourism, major events and water supply.

Key threats addressed by this implementation plan
Reduced flows and inundation from climate change, drought and altered water regimes.
Invasive plants and pest animals.
Habitat degradation, including overgrazing and recreation impacts.
Carp increasing instream turbidity and impacting aquatic plants and native fish.
Impacts of floods and bushfire.
Impacts of recreation and access, such as off-road vehicles, littering, and illegal firewood removal.

Enhancing riparian habitat, landscape connectivity and resilience

Table 8. 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
Mid Barringgi Gadyin (Wimmera River). Green Lake's tributary streams.	**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.	The extent of riparian habitat and condition of river red gum communities are maintained or improved. The connectivity of riparian habitat is maintained or improved, enabling the movement and dispersal of terrestrial species. Platypus recovery opportunities are provided through improved riparian habitat and flow management in suitable Barringgi Gadyin (Wimmera River) habitat.	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.	*Wimmera Proportion of Waterways Protected – Stage 2 (2023).* *Trust for Nature Statewide Conservation Plan 2021-2030.* *Green Lake Waterway Action Plan (2024).*	Continuation of work under the previous regional waterway strategy.
			Enhance riparian vegetation by revegetating with native species.	To be determined, depending on funding.	**Wimmera CMA.** Public land managers. Landcare groups. Private landholders.		Continuation of work under the previous regional waterway strategy.
			Reduce the impact of problem invasive fauna on riparian vegetation by controlling rabbits.	To be determined, depending on funding.	**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 boneseed, gorse, blackberry, broom, and bridal creeper.	To be determined, depending on funding.			
			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.		

Water for the environment

Table 9. Management actions associated with providing water for the environment to support instream and riparian 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
Mid Barringgi Gadyin (Wimmera River). NOTE: these actions are also included in Table 2 for the lower Barringgi Gadyin (Wimmera River).	**MO2.** Priority areas have improved management to enhance habitat, landscape connectivity and resilience. **MO5.** Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values. **MO7.** Healthier waterways enable more On Country activities for First Nations Peoples.	Native fish populations in the mid Barringgi Gadyin (Wimmera River) are maintained or improved, supported by suitable flow conditions and aquatic habitat. The species richness and spatial extent of in-channel aquatic vegetation are maintained or improved and the abundance of aquatic vegetation is increased. The availability and quality of refuge habitats for native fish species are maintained or improved, with channel capacity preserved and sediment accumulation minimised. Riparian habitat extent and the condition of river red gum communities are maintained or improved. Geomorphic habitat quality is maintained or improved through the preservation of channel form, clean substrates and an open stream bed. The connectivity of instream habitat between river reaches is maintained or improved, enabling the movement and dispersal of native fish. Where possible, dissolved oxygen levels are effectively managed to reduce risks to native fish, instream and riparian vegetation and recreation and amenity values. Management of water for the environment achieves the waterbird outcomes identified in the environmental water management plan.	Develop annual seasonal watering proposals for the Barringgi Gadyin (Wimmera River).	10 proposals (comprised of 1 proposal annually).	**Wimmera CMA.** GWMWater. Victorian Environmental Water Holder. Commonwealth Environmental Water Holder. Horsham Rural City Council.	*Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024).* Annual seasonal watering plans.	Continuation of work under the previous regional waterway strategy.
			Deliver water for the environment to the mid Barringgi Gadyin (Wimmera River) in line with the Victorian Environmental Water Holder's annual seasonal watering plans.	The volume (ML) of water delivered and extent of river watered depends on annual watering entitlements.			

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
Mid Barringgi Gadyin (Wimmera River). Horsham weir pool.	**MO5.** Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values.	Where possible, dissolved oxygen is effectively managed at levels that reduce risks to native fish, while also supporting recreation and amenity values. Where possible, the frequency, duration and severity of hypoxic events is managed to reduce risks to native fish, recreation and amenity. Where possible, nutrient levels are effectively managed to reduce the risk of blue-green algae blooms impacting native fish, recreation and amenity.	If water quality poses an emergency or unexpected risk of blue green algae or fish deaths, provide water for the environment to improve water quality in consultation with the Victorian Environmental Water Holder, if sufficient water allocations are available.	As needed.	**Wimmera CMA.** **Victorian Environmental Water Holder.**	*Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024).* Annual seasonal watering plans.	Continuation of approach under the previous regional waterway strategy.
Mid-Barringgi Gadyin (Wimmera River). NOTE: This also includes Mount William Creek which is in the Upper Catchment local area.	**MO2.** Priority areas have improved management to enhance habitat, landscape connectivity and resilience. **MO5.** Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values. **MO7.** Healthier waterways enable more On Country activities for First Nations Peoples.	Native fish populations in the mid Barringgi Gadyin (Wimmera River) are maintained or improved, supported by suitable flow conditions and aquatic habitat. The species richness and spatial extent of in-channel aquatic vegetation are maintained or improved and the abundance of aquatic vegetation is increased. The availability and quality of refuge habitats for native fish species are maintained or improved, with channel capacity preserved and sediment accumulation minimised. Riparian habitat extent and the condition of river red gum communities are maintained or improved. Geomorphic habitat quality is maintained or improved through the preservation of channel form, clean substrates and an open stream bed.	Modify the outlet from Taylors Lake into the river, enabling a wider range of water for the environment volumes to be delivered to meet desired outcomes.	1 outlet modified.	**Wimmera CMA.** **GWMWater.**	*Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024).*	New action.
			Improve the channel inlet where water flows from Mount William Creek into the Barringgi Gadyin (Wimmera River), enabling a wider range of water for the environment volumes to be delivered to meet desired outcomes. This area is impacted by old water-supply infrastructure.	1 outlet modified.	**Wimmera CMA.** **GWMWater.**	*Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024).*	New action.
			Investigate flow thresholds for Mount William Creek to maximise efficiency of water for the environment delivery to the Barringgi Gadyin (Wimmera River).	1 investigation.	**Wimmera CMA.** GWMWater.	*Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024).*	New action.

Supporting recreational access in balance with environmental and cultural values

Table 10. 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
Horsham weir pool.	**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.	Develop a management plan for Horsham weir pool.	1 management plan.	**Horsham Rural City Council.** **Wimmera CMA.** Barengi Gadjin Land Council. DEECA - public land management. Recreational user groups. Wimmera River Improvement Committee.	Building on pre-existing relationships and discussions.	New action.
Mid Barringgi Gadyin (Wimmera River). Horsham weir pool.	**MO1.** Ongoing collaboration and two-way learning in waterway planning and management, supporting self-determination and strengthening partnerships with First Nations Peoples. **MO6.** Waterways identified as high priority for recreation and amenity provide enhanced recreational opportunities and community benefits, while minimising impacts on their environmental values.	Tree-fall risks and instream vegetation growth are collaboratively assessed and managed with key stakeholders to balance access for recreation with sustainable, environmentally and culturally responsible river access and use.	Collaboratively assess and manage tree-fall risks and instream vegetation growth with key stakeholders and in line with permit processes and requirements.	Dependent on the number requiring assessment.	**Wimmera CMA.** **Barengi Gadjin Land Council.** DEECA - public land management. Parks Victoria. Horsham Rural City Council. Recreational user groups.	Works on Waterways Permit processes. Cultural heritage processes.	Continuation of existing arrangements.

Integrated water management

Table 11. Management actions associated with integrated water management.

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
Mid-Barringgi Gadyin (Wimmera River)	**MO2.** Priority areas have improved management to enhance habitat, landscape connectivity and resilience. **MO5.** Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values.	Native fish populations in the mid Barringgi Gadyin (Wimmera River) are maintained or improved, supported by suitable flow conditions and aquatic habitat. Where possible, dissolved oxygen is effectively managed at levels that reduce risks to native fish, while also supporting recreation and amenity values.	Ensure environmental, waterway and landscape values are maintained in the evolution of Horsham recycled water management.	1 plan.	**GWMWater.** Wimmera CMA. Horsham Rural City Council.	*Integrated water management*	New action.

Implementation plan - MacKenzie River, Burnt and Bungalally Creeks

This Plan sets out an integrated program of management actions for protecting and enhancing the values of the MacKenzie River, Burnt Creek and Bungalally Creek systems through the coordinated delivery of water for the environment and complementary catchment management actions. These waterways support a range of significant aquatic and riparian species and communities, including platypus, river blackfish, western swamp crayfish, Glenelg spiny crayfish, southern pygmy perch, obscure galaxias, Wimmera callistemon, and diverse riparian vegetation communities that contribute to ecosystem health, resilience and connectivity.

Water for the environment plays a critical role in maintaining the ecological functions that support these values. Management actions will seek to maintain and, where possible, improve habitat availability, water quality, stream connectivity and ecological processes that underpin the survival, reproduction and dispersal of native fish, crayfish, platypus and riparian vegetation.

To maximise ecological benefits, environmental watering will be complemented by targeted riparian management actions designed to improve the condition, extent and connectivity of riparian and aquatic habitats. These measures may include revegetation, stock exclusion, weed and pest management, and protection of high-value habitat areas. Together, these actions will strengthen ecosystem resilience, improve waterway health and enhance the capacity of native species and vegetation communities to persist and recover.

Recognising the increasing frequency and severity of dry conditions, this Plan also includes investigations into feasible and cost-effective drought refuge areas. These refuges have the potential to provide critical habitat for priority species during periods of low flow, drought and reduced availability of water for the environment. Establishing and, where appropriate, enhancing refuge habitats will help maintain key environmental values through dry periods by supporting species persistence, safeguarding remnant populations and facilitating recovery when conditions improve.

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

Management theme	Table number
Enhancing riparian habitat, landscape connectivity and resilience.	Table 12
Water for the environment.	Table 13
Drought refuge area management.	Table 14
Priority water-dependent species.	Table 15

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

Strong cultural connections and values for Wotjobaluk Nations Peoples.

Native vegetation corridor of high quality and diverse vegetation connecting Gariwerd (Grampians National Park) to the Baringgi Gadyin (Wimmera River).

Important habitat for threatened species and ecological communities, including platypus, river blackfish, western swamp crayfish, Glenelg spiny crayfish, southern pygmy percha, obscure galaxias, Wimmera callistemon and riparian vegetation communities.

High community value for recreation, tourism and amenity.

Economic values include tourism, major events and water supply.

Key threats addressed by this implementation plan

Reduced flows and inundation from climate change, drought and altered water regimes.

Invasive plants and pest animals.

Habitat degradation, including overgrazing and recreation impacts.

Carp increasing instream turbidity and impacting aquatic plants and native fish.

Impacts of floods and bushfire.

Impacts of recreation and access, such as off-road vehicles, littering, and illegal firewood removal.

Enhancing riparian habitat, landscape connectivity and resilience

Table 12. 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
MacKenzie River, Burnt Creek, Bungalally Creek and other tributaries	**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.	The condition, extent and connectivity of riparian vegetation is improved, contributing to the restoration of continuous native riparian vegetation corridors between Gariwerd (Grampians National Park) and the Barringgi Gadyin (Wimmera River). The condition of river red gum dominated ecological vegetation classes is maintained.	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.	*Wimmera Proportion of Waterways Protected – Stage 2 (2023).* *Trust for Nature Statewide Conservation Plan 2021-2030.*	Continuation of work under the previous regional waterway strategy.
			Enhance riparian vegetation by revegetating with native species.	To be determined, depending on funding.	**Wimmera CMA.** Public land managers. Landcare groups. Private landholders.		
			Reduce the impact of problem invasive fauna on riparian vegetation by controlling rabbits.	To be determined, depending on funding.	**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.	To be determined, depending on funding.			
			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. Agriculture Victoria. Private landholders.		

Water for the environment

Table 13. Management actions associated with providing water for the environment to support instream and riparian 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
MacKenzie River, Burnt Creek and Bungalally 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.	The condition, extent and connectivity of riparian vegetation is improved, contributing to the restoration of continuous native riparian vegetation corridors between Gariwerd (Grampians National Park) and the Barringgi Gadyin (Wimmera River). The condition of river red gum dominated ecological vegetation classes is maintained. Suitable flow conditions and improved aquatic habitat support native fish population persistence, with evidence of episodic dispersal between habitats. The connectivity of instream habitat between river reaches is maintained or improved, enabling the movement and dispersal of native fish. Water for the environment maintains habitat for water-dependent species including platypus, river blackfish, small-bodied native fish and freshwater crayfish.	Develop annual seasonal watering proposals for the MacKenzie River, Burnt Creek and Bungalally Creek.	10 proposals (comprised of 1 proposal annually).	**Wimmera CMA.** GWMWater. Victorian Environmental Water Holder. Horsham Rural City Council.	*Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks 2025.* Annual seasonal watering plans.	Continuation of work under the previous regional waterway strategy.
			Deliver water for the environment to the MacKenzie River, Burnt Creek and Bungalally Creek in line with the Victorian Environmental Water Holder's annual seasonal watering plans.	The volume (ML) of water delivered and extent of river watered depends on annual watering entitlements.			
			Investigate the feasibility of altering infrastructure where the Rocklands Channel crosses the MacKenzie River to enable flows from Rocklands Reservoir to enter MacKenzie River, providing another avenue for water for the environment to be delivered to the MacKenzie River.	1 assessment.	**GWMWater.** **Wimmera CMA.**	*Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks 2025.*	New action.
Burnt Creek.			Investigate options to reduce losses at the confluence of Burnt Creek with Rocklands Channel to enable more efficient delivery of water for the environment to Burnt Creek.	1 investigation. NOTE: Impacts on the operation of Rocklands Channel should be avoided.	**Wimmera CMA.** GWMWater.	*Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks 2025.*	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
Burnt 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.	Suitable flow conditions and improved aquatic habitat support native fish population persistence, with evidence of episodic dispersal between habitats. The connectivity of instream habitat between river reaches is maintained or improved, enabling the movement and dispersal of native fish.	Manage vegetation impeding efficient water for the environment flows and water supply transfers, such as Boggy Corner along Burnt Creek which has a build-up of cumbungi, causing water supply transfers to be diverted down a bypass channel, leading to no flow in this section of Burnt Creek, impacting on water-dependent species, riparian vegetation and aquatic habitat.	High density instream vegetation identified and managed as needed.	**Wimmera CMA.** **GWMWater.**	*Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks 2025.*	New action.
MacKenzie River, Burnt Creek and Bungalally 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.	Practical and feasible options to improve the reliability of water for the environment supplied from Lake Wartook have been assessed to support future implementation.	Investigate the feasibility, costs and benefits of installing pipes to transfer water from Rocklands Reservoir to Taylors Lake and the Mount Zero Treatment Plant to reduce reliance on Lake Wartook during dry periods and enhance capacity to deliver water for the environment flows to support priority values including platypus, river blackfish, freshwater crayfish and small-bodied native fish.	1 proposal submitted.	**GWMWater.** **Wimmera CMA.** Horsham Rural City Council.	*Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks 2025.*	Continuation of previous discussions.

Drought refuge area management

Table 14. Management actions associated with establishing and 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
MacKenzie River and Burnt Creek.	**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.	Options, feasibility, costs and benefits of providing water for the environment to drought refuge areas in the MacKenzie River, Burnt Creek and Bungalally Creek system is considered to support persistence of environmental values including habitat, native fish, riparian and aquatic vegetation, frogs and waterbirds during and after dry conditions and drought.	Investigate options and explore the long-term feasibility, costs and benefits of establishing pipeline watered drought refuge sites in the MacKenzie River and Burnt Creek. Feasibility considerations may include: • Cost-benefit analysis. • Capacity to continue to support waterway values under climate change scenarios. • Whether water for the environment provided to drought refuge sites is likely to sustain target species and ecological values given modelling of future streamflow projections.	1 feasibility assessment and cost-benefit analysis completed.	**Wimmera CMA.** GWMWater. Victorian Environmental Water Holder. GWMWater. Barengi Gadjin Land Council. DEECA - Public Land Managers.	*Lower MacKenzie River and upper Burnt Creek flow optimisation project 2019.* *Wimmera CMA's Dry Conditions Action Plan.* *Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks 2025.*	New action.

Priority water-dependent species

Table 15. Management actions associated with providing habitat and supporting persistence of water-dependent species.

Priority area or Priority species	**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**
Platypus. River blackfish. Freshwater mussels. Freshwater crayfish. Small-bodied native fish.	**MO8.** Key water-dependent species are supported in waterways that provide suitable habitat, including during dry conditions.	A viable breeding population of platypus is sustained in the upper MacKenzie River. A viable breeding population of river blackfish is sustained in the MacKenzie River. Viable and self-sustaining breeding populations of river blackfish are established in waterways with suitable habitat. Freshwater crayfish and freshwater mussel locations, population size and habitat requirements in the Wimmera are known. Feasible future actions and locations for freshwater crayfish and freshwater mussel are identified.	Investigate the environmental values of Mount Zero channel and, if appropriate following the investigation, develop a proposal for managing these values.	1 investigation completed. 1 proposal developed.	**Wimmera CMA.** **GWMWater.** **Barengi Gadjin Land Council.**	*Wimmera Platypus Management Plan (2026, draft).* *Wimmera Native Fish Management Plan (2022).*	New action.

Implementation plan - Horsham wetlands

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 Horsham wetlands including the Natimuk-Douglas Chain of Lakes.

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
Reducing threats to wetlands and maintaining values.	Table 16
Management actions associated with supporting recreational access and amenity while minimising impacts on environmental and cultural values.	Table 17Table 17

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 concentration and diversity of wetland types and associated plants and animals, forming a major wetland complex.
Critically endangered wetland community, Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains.
Natimuk-Douglas chain of lakes includes wetlands listed on the **National Directory of Important Wetlands.**
Support high biodiversity, particularly wetland plants, frogs, birds and invertebrates.
Support threatened plants and animals, including nationally threatened growling grass frogs, and provide breeding habitat for threatened brolgas.
Frequently co-located with **endangered buloke vegetation communities**.
Strong cultural connections and values for Wotjobaluk Nations Peoples.
Community values and stewardship, including active community groups.
Recreational opportunities including walking, fishing, yabbying, camping, bird watching, water sports and duck hunting.
Economic values, including water supply, tourism and community events centred around wetlands.

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, drains and dams in the wetland basin and surrounds.
Cropping of the wetland basin and riparian zone.
Invasive plants and pest animals.
Habitat degradation, including overgrazing and recreation impacts.
Introduction of nutrients from cropping practices in or beside the wetland.
Lack of connectivity, with narrow buffer areas generally surrounded by agricultural land.

Reducing threats to wetlands and maintaining values.

Table 16. 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
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains. 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.
			Support private landholders to protect and manage wetlands on their properties by controlling stock access, reducing the impact of weeds and pest animals, and maintaining natural hydrology.	To be determined based on funding.	**Wimmera CMA.** Trust for Nature. Private landholders.	*Trust for Nature's Statewide Conservation Plan 2021-2030.* *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.	50 ha (annually).	**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 (annually).			
			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.		

Supporting recreational access in balance with environmental and cultural values

Table 17. 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
Pine Lake.	**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 future management of Pine Lake.	1 investigation completed.	**GWMWater.** Barengi Gadjin Land Council. Wimmera CMA.		New action.
Green Lake.			Support implementation of Green Lake management plans to benefit social, cultural, economic and environmental values.	To be determined.	**GWMWater.** **Horsham Rural City Council.** Wimmera CMA. Recreational user groups.	*Green Lake Waterway Action Plan (2024)*	Continuation of existing work.



UPPER CATCHMENT

IMPLEMENTATION PLAN

VICTORIA State Government Australia

Wimmera CMA

Upper Catchment local area - overview

About the Upper Catchment

The Upper Catchment local area comprises the upper catchment of the Barringgi Gadyin (Wimmera River), the northern section of the Gariwerd (Grampians National Park) in its west and the Pyrenees ranges in its east. The population of the region is over 9,000 people across more than 372,770 hectares.

Nature conservation makes up 20% of the region with extensive areas of public land in the Gariwerd (Grampians National Park), other parks and reserves and beside waterways. Agriculture makes up the majority of the region's land use with the greatest use being the grazing of modified pastures (42%) and dryland cropping (18%). (6; 30)

Legislation to create new national parks was introduced into Victoria's parliament on 10 September 2025, including Mount Buangor National Park, which includes a portion of the current Mount Cole State Park and Mount Buangor State Park; and the Pyrenees National Park, made up of Landsborough and Landsborough Hill nature conservation reserves and the Pyrenees State Forest.

The Upper Catchment local area is a living cultural landscape with deep and continuing connections for Wotjobaluk Nations Peoples and Eastern Maar Peoples. The *Victorian Aboriginal Heritage Act 2006* recognises two Registered Aboriginal Parties, Barengi Gadjin Land Council Aboriginal Corporation and Eastern Maar Aboriginal Corporation, as the primary guardians, keepers and knowledge holders of Aboriginal Cultural Heritage for sections of the Upper Catchment local area.

The area includes the southern portion of Northern Grampians shire, north-western section of Pyrenees Shire and northern sections of Ararat Rural City Council to the east and west of Ararat (see Figure 5).

Rivers and streams

The Upper Catchment includes the headwaters of the Barringgi Gadyin (Wimmera River) - the heart of the Wimmera catchment. The river begins at Mount Cole in the Pyrenees Ranges and is fed by many tributary streams arising in the steep hill country around Navarre, the Black Range Scenic Reserve, northern sections of the Gariwerd (Grampians National Park) and the western Pyrenees ranges.

Many Upper Catchment streams flow into large water storages vital for the catchment's water supply. For example, Fyans Creek feeds Lake Bellfield, providing a regionally important source of water for a vast network of towns and farms distributed via the Wimmera Mallee Pipeline. Several streams also provide water for townships like Elmhurst, Buangor and Moyston.

Upper Wimmera River Flagship Waterway

Flagship waterways are large-scale, long-term priority areas identified by the Victorian Government for coordinated investment and rehabilitation to improve catchment and waterway health across regional and urban areas. [31]

The Upper Wimmera River Flagship Waterway project is a large-scale river restoration initiative focused on the Barringgi Gadyin (Wimmera River) and its tributary streams in the upper Wimmera catchment upstream of the Glenorchy township (see Figure 6). The project is led by Wimmera CMA in partnership with Traditional Owners, public and private land managers and community and Landcare groups.

The Upper Wimmera catchment is a critical source of water for towns, agriculture and the environment. It supports important aquatic and riparian ecosystems, providing habitat for native fish and aquatic invertebrates, while also holding significant cultural heritage and recreational values.

However, the health of the river system is being impacted by erosion in upper catchment tributaries. Eroding streambeds and banks contribute sediment and salts to waterways, reducing water quality and increasing turbidity. The accumulation of sediment in waterways also degrades aquatic habitat, reducing the diversity and abundance of native plants and animals.

The project's vision is that by 2040, much of the Upper Barringgi Gadyin (Wimmera River) and its tributaries will be stabilised and protected through restoration works, healthy native vegetation and sustainable, fit-for-purpose land and waterway management practices.

To achieve this vision, the project will deliver large-scale waterway restoration, riparian protection and enhancement works that improve waterway stability, increase the extent and quality of riparian vegetation, strengthen habitat connectivity, enhance water quality and protect the region's high-value Chain of Ponds systems.

Key activities include:

- **Waterway restoration works** to stabilise the beds and banks of highly eroding tributaries. These works will help reduce sediment movement, improve water quality, protect downstream environmental values and prevent the loss of productive agricultural land.
- **Riparian protection and enhancement activities** that support private landholders to improve the health and condition of waterways on their properties. Activities may include fencing, revegetation and improved land management practices to protect and restore riparian vegetation and habitat.
- **Complementary pest plant and animal control activities** on adjoining public land along priority areas, delivering a coordinated, landscape-scale approach to improving river health, ecological connectivity and catchment resilience.

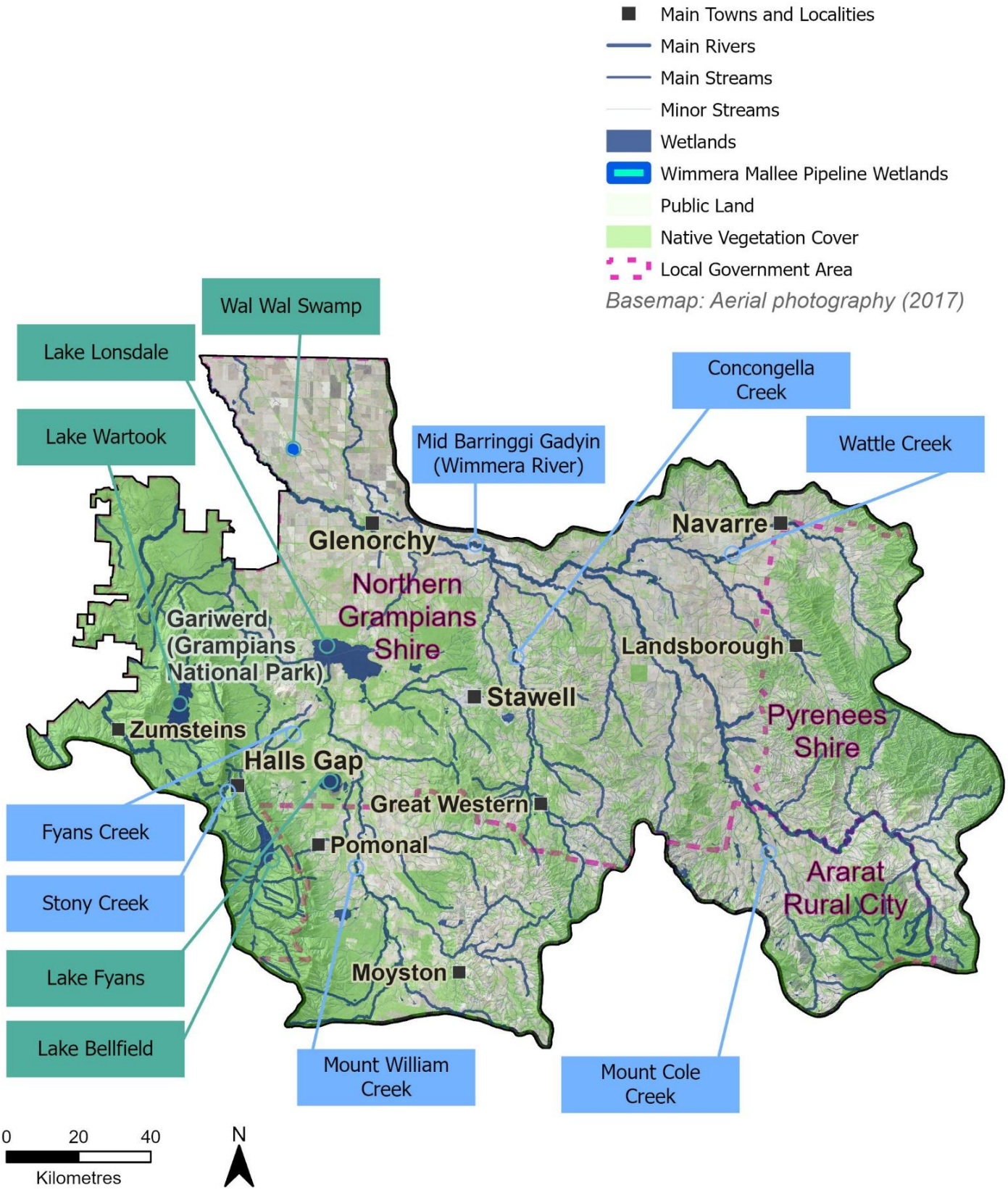


Figure 5. The Upper Catchment local area including municipal boundaries. Information boxes are colour-coded by feature type: blue for rivers and streams and teal for wetlands.

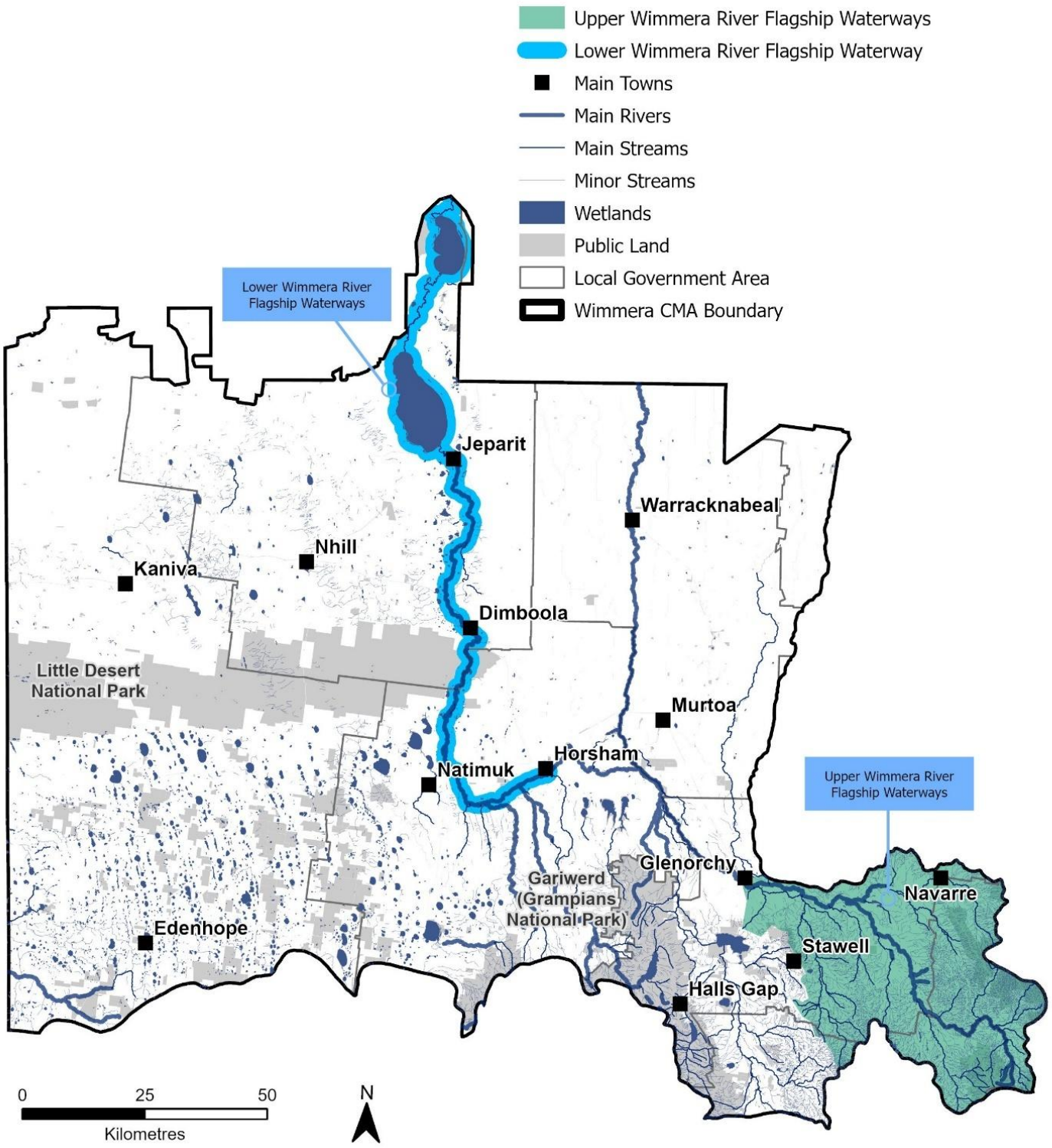


Figure 6. Flagship waterways in the Wimmera, including the Upper Wimmera River Flagship Waterway.

Wetlands

The Upper Catchment local area includes approximately 220 wetlands. Deep or large lakes including Lakes Wartook, Bellfield, Lonsdale and Fyans, are important water-supply storages with high social, economic, environmental and cultural values.

About two-thirds of the area's wetlands are shallow and seasonal. Many are associated with rivers, either in a floodplain or connected to a stream channel where they fill from stream flow and overflow to a downstream channel. There are also several non-riverine shallow freshwater wetlands, particularly on the fringes of the Gariwerd (Grampians National Park).

Wetlands range in size from less than one hectare to large water storages that are generally more than 200 hectares in area. Relatively shallow Lake Lonsdale is the largest, covering an area of 1,700 hectares. [32]

Upper Barringgi Gadyin (Wimmera River), Mount Cole Creek and Tributaries

River and stream values

Environmental values

Creeks with their headwaters in the Gariwerd (Grampians National Park) and the Pyrenees ranges support considerable environmental values. These creeks stretch over large public land reserves and are sources of water for stock and domestic purposes and for irrigating vines or perennial pastures. In combination with adjacent agricultural land use, the creeks' environmental values can diminish.

Glenlofty Creek, an upper Barringgi Gadyin (Wimmera River) tributary arising in the Pyrenees range, continues to hold environmental value within its geomorphologically rare 'chain of ponds' and fish, bird and macroinvertebrate communities.

Most streams and creeks throughout the Upper Catchment support threatened Ecological Vegetation Classes. This includes Endangered Plains Grassy Woodlands, Alluvial Terraces Herb-rich Woodlands (Nine Mile Creek), Creek Line Grassy Woodlands and Vulnerable Red Gum Swamp. The Barringgi Gadyin (Wimmera River) supports extensive endangered and rare Riparian Woodlands. Heifer Station Creek additionally has endangered and geographically rare Swampy Riparian and Creekline Sedgy Woodlands.

Threatened fish species in the Upper Catchment, from surveys commissioned by Wimmera CMA since 2014, include: western swamp crayfish (*Gramastacus insolitus*), in Mount William, Mount Cole and Burnt creeks; River Blackfish (*Gadopsis marmorata*), in Fyans and Mount William creeks; and southern pygmy perch *(Nannoperca australis),* in Burnt, Mount Cole and Mount William Creeks and the Barringgi Gadyin (Wimmera River).

Other threatened or endangered waterway-dependent species across the upper catchment include rakali *(Hydromys chrysogaster)* and growling grass frogs *(Litoria raniformis)*.

Platypus *(Ornithorhynchus anatinus)* were widespread before the Millenium Drought but are now believed to be restricted to the Mackenzie River of the Horsham local area. There are occasional anecdotal reports of sightings elsewhere in the region, but up to 2025 none had been confirmed.

Cultural values

Barengi Gadjin Land Council Aboriginal Corporation and Eastern Maar Aboriginal Corporation are recognised as the primary keepers and knowledge holders of the local area's Aboriginal Cultural Heritage. Connections between First Nations Peoples and Country are reflected in many ways including artefacts, rock art, culturally significant trees and creation stories featured around Gariwerd (Grampians National Park) and surrounds, the Pyrenees range, Lake Lonsdale, Lake Fyans and other waterways.

Social and recreational values

Streams across the Upper Catchment, particularly in and near the Gariwerd (Grampians National Park) and Pyrenees ranges, help form the atmosphere that attracts many sightseers.

Camping, picnicking and hiking facilities available across the park where these streams often feature, such as Fyans Creek, enhance the environmental experience that attract many people. Streams beyond the Gariwerd (Grampians National Park) also carry high value for their amenity and streamside uses when flowing.

Angling is popular in the Barringgi Gadyin (Wimmera River) and Mount William and Fyans Creeks. Some fish species here include introduced natives golden perch (*Macquaria ambigua)*, Murray cod (*Maccullochella peelii peelii*), freshwater catfish (*Tandanus tandanus*) and silver perch (*Bidyanus bidyanus*) and native Wimmera yabbies (*Cherax destructor).* Exotic species include redfin (*Perca fluviatilis*), brown and rainbow trout (*Salmo trutta and Oncorhynchus mykiss)*. [20]

Seasonal duck hunting is permitted along specific sections of the Barringgi Gadyin (Wimmera River) on public land in accordance with Game Management Authority guidelines.

Economic values

Streams within the Gariwerd (Grampians National Park) are important for directing water into water storages and large recreational lakes. These supply water for towns across the catchment for domestic and stock use in addition to water for the environment.

Tourism along Upper Catchment local area streams is also valuable for the region's economy. The natural environment of the Gariwerd (Grampians National Park), supported by waterway attractions such as the Venus Baths near Halls Gap and numerous waterfalls, attracts over 800,000 visitors per year.

River and stream condition

A 2010 Index of Stream Condition assessment recorded most streams as being in 'moderate' condition.

The majority of 'good' condition waterways were those with their headwaters in public reserves. This includes Golton Creek in the Gariwerd (Grampians National Park) and small tributaries in the Pyrenees ranges.

Stream condition declines as neighboring land use becomes agricultural or degraded. The Index of Stream Condition assessment classed 77.5 km of Mount William Creek as being in poor condition. It also classed Fyans Creek, as it passes through the tourist town of Halls Gap and Miller's Creek, going through agricultural land, as poor. Both waterways terminate at Lake Lonsdale. Smaller tributaries on the northern side of the Barringgi Gadyin (Wimmera River) in the eastern part of the local area, where erosion risk is greatest, were also classed as being in poor condition.

Threats and drivers of change

Erosion

The steep gradients and soil types in the Upper Catchment's hill country are prone to water erosion, particularly when water runs at speed down the steep slopes over exposed soil. This erosion incises and widens creeks, often creating deep gullies with downstream impacts. Eroded sediment can settle in deep pools in the Barringgi Gadyin (Wimmera River), reducing habitat and increasing water turbidity and nutrient levels. Wimmera CMA erosion-control works during the two decades before 2025 improved many highly eroded streams and their riparian zones. Works are targeted at sites with the greatest potential to reduce sediment loads into streams. [33] The extent of waterways protected from livestock in the upper catchment currently is 41.5%, compared with 92% in the Barringgi Gadyin (Wimmera River)'s lower catchment, indicating a need for further works.

Reducing livestock access to waterways has been a priority for upper-catchment erosion control, where over 700 km of waterway frontage remains unprotected. [12] Landcare groups, the Perennial Pasture Systems group and landholders have provided complementary work to buffer waterways from livestock access, protect riparian vegetation and retain ground cover on neighboring paddocks.

With predicted high-intensity rain and reduced regularity with climate change, degraded land will be at a heightened risk of erosion from such events - slowing water down during a flood and stablising soils with vegetation will be important.



Erosion in a tributary of Salt Creek in the Upper Catchment local area.

Water Quality

There are domestic and large irrigation dams that capture water high upstream in the catchment. These dams, mainly used for viticulture and stock watering, can reduce waterway flows and compound water-quality problems in parts of the catchment.

Saline groundwater trickling into creeks during dry conditions also contributes to poor water quality in some streams, although this impact is much reduced in recent times with groundwater levels dropping following successive dry years. Pest fish species, including carp *(Cyprinus carpio),* also impact water quality.

Hydrology - Climate change and dry conditions

The Wimmera's future climate is set for reduced rainfall, storm events, variability and increases in average daily temperatures. This is likely to contribute to reduced flows in waterways.

Landscape modifications have altered natural water flow into creeks and streams. Farm dams exacerbate the removal of water from the system. Many landholders value them for their amenity and there is some Landcare interest in enhancing them as wildlife refuges in the highly modified and drying landscape.

Weeds and pest animals

The Wimmera Invasive Plant and Animal Management Strategy identify the 'Grampians-Pyrenees Arc' as a high-priority area for invasive plant and animal control. Priorities include:

- Improvement of water quality in tributary streams for the Barringgi Gadyin (Wimmera River) through the reduction in rabbit numbers on steep hill sides and in stream banks and through the removal of weeds that harbour rabbits such as gorse *(Ulex europaeus),* blackberry, *(Rubus)* broom *(Cytisus scoparius)* and boneseed (*Chrysanthemoides monilifera* subsp. *monilifera*).
- Associated improvement in the quality of remnant native vegetation through the removal of these weeds.
- Improvement of quality of riparian vegetation through the removal of blackberry from streams.

Gorse, blackberry, bridal creeper, (*Asparagus asparagoides*), broom and boneseed are target plant species for removal in the Upper Catchment. Priority areas for weed control are on public land and along high-value streams. Similarly, controlling rabbit and deer *(Cervidae)* populations in these regions is important for protecting fragile stream banks from erosion. [22]

Carp are present in some waterways, requiring ongoing management to protect water quality and native species.

Upper Catchment Wetlands

Wetland values

Environmental values

Waterway-dependent threatened and endangered birds recorded in the area include the Australasian shoveler *(Spatula rhynchotis),* hardhead duck *(Aythya australis),* musk duck *(Biziura lobata),* glossy ibis *(Plegadis falcinellus),* brolga *(Antigone rubicunda),* great egret *(Ardea alba),* freckled duck *(Stictonetta naevosa)* and royal spoonbill *(Platalea regia).*

Wal Wal Swamp south of Murtoa receives water for the environment via the Wimmera Mallee Pipeline network. Locally, it provides a biodiversity refuge in a highly agricultural landscape for rare, endangered, or poorly known species. Some plant species present include: winged water-starwort (*Callirtriche umbonate);* ferny small-flower buttercup *(Ranunculus pumilio var. politus),* annual bitter-cress (*Cardamine paucijuga s.s.)* and river swamp wallaby-grass (*Amphibromus Fluitans*). [34] Threatened birds include the eastern great egret *(Ardea modesta),* spotted harrier *(Circus assimilis)* and square-tailed kite *(Lophoictinia isura).*

Cultural values

Connections between Eastern Maar and Wotjobaluk Nations Peoples and Country are reflected in many ways including artefacts, rock art, scar trees and creation stories featured around Lake Lonsdale, Lake Fyans, Wal Wal Swamp and other wetlands within Gariwerd (Grampians National Park) and the Pyrenees range. [35]

Protection and respectful management of cultural values associated with Upper Catchment wetlands is a focus of ongoing collaboration and the Upper Catchment continues to be a place of cultural learning, renewal and responsibility for Wotjobaluk Nations Peoples and Eastern Maar Peoples.

Social and recreational values

Lakes Lonsdale, Wartook, Bellfield and Fyans closely associated with the Gariwerd (Grampians National Park) and major tourist destinations, are recreational assets, particularly for fishing, camping, boating and wilderness experiences. Organisers of major events in the catchment often integrate the terrain and vistas as well as facilities associated with the area's lakes into planning. Access to the lakes' natural areas improves regional liveability and wellbeing by providing opportunities for people to participate in various forms of outdoor recreation.

All the lakes differ in their appeal. Lake Lonsdale, near Stawell, is renowned for its fish and yabbies when holding water. Neighbouring Lake Fyans also has angling appeal and is a highly attractive camping and water-skiing holiday destination. Lake Fyans' 9.6 km walking track around its perimeter is also a recreational feature in addition to its many nature tracks.

Lake Bellfield at Halls Gap and Lake Wartook in the heart of the Gariwerd (Grampians National Park), are also renowned angling destinations and are major features of the Gariwerd (Grampians National Park) wilderness-holiday experience.

Economic values

Many wetlands have high economic value based on their water-storing role. The Upper Catchment is home to most of the region's main water storages which supply domestic, stock and water for the environment. The largest water storage is Lake Bellfield which can hold 78,500 megalitres. Supported by Taylors Lake near Horsham, it is the main storage for the Wimmera Mallee Pipeline system and supplies water for towns including Halls Gap and Pomonal, farms, recreational lakes and water for the environment for wetlands across the Wimmera and Mallee.

Lake Fyans supplies water to Stawell, Ararat and Great Western. Lake Wartook is an important water resource for the city of Horsham and township of Natimuk. At maximum capacity it holds 29,300 megalitres and also provides environmental flows for the MacKenzie River, Burnt Creek and Bungalally Creek.

Recreational lakes support the local economy. Lake Fyans attracted about 20,500 recreational users in 2022-23, providing an estimated economic contribution of $2.9 million. [9] Lake Fyans is one of the most important recreational lakes in the region, hosting several recreational activities including sailing, jet skiing, hunting as well as walking and caravanning opportunities.

Lake Lonsdale also has high recreational value.

Wetland condition

Pipeline wetlands

Wal Wal Swamp was ranked as 'Good' in a 2012 Index of Wetland Condition (IWC) Survey and 'Moderate' for the IWC Biota Rating. [34]

Native vegetation

Wetlands within the Gariwerd (Grampians National Park) are least affected by modification and damage to their neighboring vegetation. Some small reaches of their perimeters support threatened Ecological Vegetation Classes including Wet Heathlands around Lake Wartook; and Valley Grassy Forest/Heathy Woodland Complex, Grassy Dry Forest and Herb-rich Foothill Forest Complex around Lake Bellfield.

Exiting the confines of public land in the Gariwerd (Grampians National Park), Lake Fyans, surrounded by agricultural land, has endangered vegetation communities including Deep Freshwater Marsh and Plains Grassy Woodland. In addition, it has vulnerable Shallow Sands Herb-rich Woodland and Lateritic Woodland.

Endangered Plains Grassy Woodlands also surround most of Lake Lonsdale, with some portions including Deep Freshwater Marsh. Vulnerable vegetation communities include Heathy Woodland Mosaic, Damp Sand Herb-rich Woodland and Shallow Sand Woodland.

Threats and drivers of change

Hydrology - Climate change and dry conditions

A drying climate with increasing water extraction and reduced water availability minimises available habitat for native species and waterways' ability to support economic, cultural and social values. There are challenges to providing water for some wetlands.

Dry vegetation and hot weather conditions increase the threat of bushfires which remove ground cover, increasing the risk of erosion if major rain events occur before vegetation re-establishes. Rain events can wash ash and sediment into waterways, heightening the risk of 'black water' events and fish deaths.

Excess nutrients also promote toxic algal blooms which particularly affect the recreational use of larger lakes. An example is at Lake Lonsdale where high evaporation losses, increases in salinity and blue-green algal outbreaks impact on recreational activities and environmental flows.

Weeds and pest animals

Weedy grass species such as Wimmera rye-grass (*Lolium rigidum*) and Toowoomba canary grass (*Phalaris aquatica L*) are often prevalent in wetland areas.

Rabbits and foxes (*Vulpes vulpes*) are attracted to wetlands given they provide a ready source of food and drinking water. [34]

Carp, goldfish (*Carassius auratus*), tench (*Tinca tinca*) and mosquitofish (*Gambusia affinis*) threaten native species and overall wetland health across the catchment.

Modifications

Lower regions of the Upper Catchment were highly channelised for water delivery. Natural water flow was modified as a result, directing water away from natural wetlands to man-made dams, or wetlands have been excavated for increased water storage.

Impacts of recreation

Due to the high use of lakes for recreation, it is important to manage access so it is safe and does not impact on biodiversity, water quality and amenity of natural areas. This has been a focus area for Wimmera CMA, councils and recreational user groups.

Stakeholder and community feedback

During development of the Strategy and Plan, Wimmera CMA invited input from stakeholders and the community. Participants from the Upper Catchment local area identified the following waterways as particularly important:

- Barringgi Gadyin (Wimmera River)
- Mount William Creek
- Mount Cole Creek
- Fyans Creek
- Concongella Creek
- Wattle Creek
- Stony Creek
- Pleasant Creek
- Three Mile Creek
- Lake Lonsdale
- Lake Fyans
- Lake Bellfield
- Lake Wartook
- Seasonal wetlands

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

- **Habitat improvement and erosion control:** Support for enhancing instream and riparian habitat through fencing, off-stream watering points and measures to reduce bed and bank erosion. Landcare interest in enhancing farms dams to provide habitat for water-dependent native species.
- **Biodiversity and species protection:** Interest in identifying locations of threatened species, understanding potential habitat benefits and strengthening weed and pest-management efforts targeting carp, serrated tussock, rabbits, cats, foxes and kangaroos.
- **Mount Cole Creek:** Strong community and Landcare support for waterway improvements, including providing environmental flows to enhance ecological values and protect drought refuge pools. Stakeholders highlighted the water quality and values supported, with declines observed due to water stored upstream in Mount Cole Reservoir.
- **Seasonal freshwater wetlands:** Support significant biodiversity. There may be opportunities to remove barriers and enhance flows to these areas as well as improving their protection on private land.
- **Sustainable land and water management:** Calls to engage farmers in nutrient-retention practices and improve stormwater-fed creek water quality from the Stawell township.
- **Connectivity and resilience:** Support for linking remnant vegetation and increasing natural disaster-resilience, including identifying high-risk areas and exploring the use of virtual fencing for managing stock in areas tricky to fence or prone to flood and fire.
- **Recreation and amenity:** The area has terrific recreational lake assets. There is a need to continue to manage them for these values, while managing risks and impacts.
- **Community participation:** Strong interest in growing Landcare membership and increasing community education on waterways including wetlands, biodiversity, threats and climate change.

Priority areas for management

The Strategy identified the Upper Catchment's priority areas for management:

- Upper Barringgi Gadyin (Wimmera River) and tributaries
- Mount Cole Creek and tributaries
- Mount William Creek and tributaries
- Wal Wal Swamp (pipeline watered wetland)
- Wetlands with high environmental value
- Wetlands with high social and economic value, including:
  - Lake Fyans
  - Lake Lonsdale
  - Lake Bellfield
  - Lake Wartook
  - Mount Cole Reservoir

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.



An upper catchment waterway affected by stock access.

Upper Catchment local area – Implementation plan

The following tables outline management actions for the Upper Barringgi Gadyin (Wimmera River) and tributaries, Mount William Creek and tributaries and Upper Catchment wetlands. 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 Upper Catchment 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 - Upper Barringgi Gadyin (Wimmera River) and tributaries and Mount William Creek and tributaries

This Implementation Plan provides a coordinated framework to protect and enhance the ecological values of the Upper Barringgi Gadyin (Wimmera River) and tributaries and Mount William Creek and tributaries. 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. Many of these management actions are being delivered through the Upper Wimmera River Flagship Waterway Project.

The recent establishment of a pipeline enabling water delivery to drought refuge areas within Mount Cole Creek presents an important opportunity to enhance the resilience of these refuge habitats and support biodiversity outcomes by providing water for the environment, when available, during future drought events.

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

Management theme	Table number
Enhancing riparian habitat, landscape connectivity and resilience.	Table 18
Reducing the impacts of erosion	Table 19
Water for the environment.	Table 20
Drought refuge area management.	Table 21

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 environmental values, including obscure galaxias, frogs and native vegetation.
Threatened species, including western swamp crayfish and southern pygmy perch.
High quality and threatened native vegetation communities in sections.
Strong cultural connections and values for First Nations Peoples.
Unique geomorphology, including chains of ponds in some waterways.
Contributes to landscape connectivity, for the Grampians to Pyrenees Biolink vision.
Town water and irrigation supply, landscape amenity and recreational values.
Strong community connection to waterways, with high level of stewardship.

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.
Grazing by stock.
Invasive plants and pest animals.
Impacts of floods and bushfire.

Enhancing habitat, landscape connectivity and resilience

Table 18. 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
Upper Barringgi Gadyin (Wimmera River) and tributaries. Mount William Creek and tributaries.	**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.	Sediment generation and movement into the Barringgi Gadyin (Wimmera River) is reduced through improved bed and bank stability, erosion control and riparian protection, consistent with Upper Wimmera Flagship outcomes. Riverbeds and banks are stabilised to improve instream channel condition. Riparian vegetation condition and extent are improved to support more diverse and connected riparian zones, including the Gariwerd (Grampians) to Pyrenees Biolink.	Support private landholders to protect and manage riparian areas on their properties by managing stock access and controlling weeds, foxes and rabbits.	75 km. 240 ha of grazing management.	**Wimmera CMA.** Private landholders. Trust for Nature.	*Upper Wimmera River Flagship Waterway Project.* *Wimmera Proportion of Waterways Protected – Stage 2 (2024).* *Wimmera Invasive Plant and Animal Management Strategy (2019).* *Trust for Nature Statewide Conservation Plan 2021-2030.* *Waterway Action Plans for creeks including: Concongella, Glendhu, Glenlofty, Glenpatrick, Millers, Mount Cole, Seven Mile, Shays, Six Mile, Spring, Tuckers, Wattle and the Wimmera River (reaches 2, 3, 4, 5, 6.1, 6.2).*	Part of the Upper Wimmera River Flagship Waterway Project. A proportion of the identified action amounts are funded until June 2028. Continuation of work under the previous regional waterway strategy.
			Enhance riparian vegetation by revegetating with native species.	70 ha.	**Wimmera CMA.** Landcare groups. Private landholders.		
			Reduce the impact of problem invasive fauna on riparian vegetation by controlling rabbits.	50 ha (annually) of pest animal control.	**Wimmera CMA.** Public land managers. Agriculture Victoria. Landcare groups. Private landholders.		
			Reduce the impact of weeds on riparian vegetation by controlling problem weeds.	50 ha (annually) weed control (woody and non-woody).			
			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. Agriculture Victoria. Private landholders.		

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
Upper Barringgi Gadyin (Wimmera River) and tributaries. Mount William Creek and tributaries.	**MO2.** Priority areas have improved management to enhance habitat, landscape connectivity and resilience. **MO9.** Net rates of streamflow interception from water extraction and storages are stabilising in the Barringgi Gadyin (Wimmera River) catchment.	A reduction or stabilisation of the impacts of water extraction and farm dam storage on stream flows in upper catchment waterways, as increased access to piped water supplies reduces the need to capture rainfall runoff, easing pressure on stream flows and supporting healthier waterways.	Where there is a strong case for environmental and community benefits, support water efficiency initiatives such as piped water supply from the Grampians Headworks Storages, to reduce direct extraction from waterways and reliance on farm dams that limit runoff from reaching waterways.	As opportunities arise.	**Wimmera CMA.**		Continuation of existing processes.
			Trial incentive programs to decommission and use farm dams for environmental purposes in areas where water supply pipelines are being built and/or release water from them.	To be determined, depending on funding.	**Wimmera CMA,** GWMWater Landholders		New action.

Reducing the impacts of erosion

Table 19. Management actions associated with reducing erosion to prevent impacts on downstream waterways and habitat.

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
Upper Barringgi Gadyin (Wimmera River) and tributaries. Mount William Creek and tributaries.	**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.	Sediment generation and movement into the Barringgi Gadyin (Wimmera River) is reduced through improved bed and bank stability, erosion control and riparian protection, consistent with Upper Wimmera Flagship outcomes. Riverbeds and banks are stabilised to improve instream channel condition.	Install erosion control structures to reduce bed and bank erosion and movement of sediment downstream.	30 structures.	**Wimmera CMA.** Private landholders.	*Upper Wimmera River Flagship Waterway Project.* *Wimmera Proportion of Waterways Protected – Stage 2 (2024).* *Waterway Action Plans for creeks including: Concongella, Glendhu, Glenlofty, Glenpatrick, Millers, Mount Cole, Seven Mile, Shays, Six Mile, Spring, Tuckers, Wattle and the Wimmera River (reaches 2, 3, 4, 5, 6.1, 6.2).*	Part of the Upper Wimmera River Flagship Waterway Project. A proportion of the identified action amounts are funded until June 2028. Continuation of work under the previous regional waterway strategy.

Water for the environment

Table 20. Management actions associated with providing water for the environment to support instream and riparian 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
Barringgi Gadyin (Wimmera River) and tributaries. Mount William Creek and tributaries.	**MO2.** Priority areas have improved management to enhance habitat, landscape connectivity and resilience. **MO5.** Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values. **MO7.** Healthier waterways enable more On Country activities for First Nations Peoples.	Native fish populations in the mid Barringgi Gadyin (Wimmera River) and Mount William Creek are maintained or improved, supported by suitable flow conditions and aquatic habitat. The species richness and spatial extent of in-channel aquatic vegetation are maintained or improved and the abundance of aquatic vegetation is increased. The availability and quality of refuge habitats for native fish species are maintained or improved, with channel capacity preserved and sediment accumulation minimised. Riparian habitat extent and the condition of river red gum communities are maintained or improved. The connectivity of riparian habitat is maintained or improved, enabling the movement and dispersal of terrestrial species. Geomorphic habitat quality is maintained or improved through the preservation of channel form, clean substrates and an open stream bed. The connectivity of instream habitat between river reaches is maintained or improved, enabling the movement and dispersal of native fish. The availability and quality of refuge habitats for native fish species are maintained or improved, with channel capacity preserved and sediment accumulation minimised.	Develop annual seasonal watering proposals for the Barringgi Gadyin (Wimmera River).	10 proposals (comprised of 1 proposal annually).	**Wimmera CMA.** GWMWater. Victorian Environmental Water Holder. Commonwealth Environmental Water Holder. Northern Grampians Shire Council.	*Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024).* Annual seasonal watering plans.	Continuation of work under the previous regional waterway strategy.
			Deliver water for the environment to the mid Barringgi Gadyin (Wimmera River) in line with the Victorian Environmental Water Holder's annual seasonal watering plans.	The volume (ML) of water delivered and extent of river watered depends on annual watering entitlements.			
Mount William Creek. Lake Lonsdale.			Increase community understanding of the management of the Lake Lonsdale and Mount William Creek system.	To be determined.	**Wimmera CMA.** GWMWater. Victorian Environmental Water Holder.		Continuation of previous work.
Lake Lonsdale			Investigate the current operation of Lake Lonsdale and develop potential recommendations to GWMWater Storage Management Rules: Wimmera - Mallee System Headworks for Lake Lonsdale to improve management of water for the environment.	To be determined.	**Wimmera CMA.** Victorian Environmental Water Holder. GWMWater. Northern Grampians Shire Council. Friends of Lonsdale.	*Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024).*	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
			Increase community understanding of management of Lake Lonsdale and Mount William Creek to build informed awareness of why management actions occur and how they contribute to environmental, social and broader catchment outcomes.	To be determined.	**Wimmera CMA.** **GWMWater.** Victorian Environmental Water Holder.		New action.
			Establish a more functional dam wall and outlet at Lake Lonsdale that maximises social, environmental and economic values and enables improved management of water for the environment.	One dam wall and outlet improved.	**GWMWater.** Wimmera CMA.		Planning underway.

Drought refuge area management

Table 21. Management actions associated with managing drought refuge areas, including providing 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
Mount Cole Creek.	**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.	During and after dry conditions and drought, waterway habitat, environmental values including native fish, riparian and aquatic vegetation, frogs and waterbirds and recreational values are maintained at drought refuge areas. Drought refuge areas consistently hold water and provide habitat during dry periods.	Develop annual seasonal watering proposals for Mount Cole Creek's drought refuge pools.	10 proposals (comprised of 1 proposal annually).	**Wimmera CMA.** Victorian Environmental Water Holder. GWMWater. Local government.	Victorian Environmental Water Holder's annual seasonal watering plans.	Watering connection completed in 2026, enabling environmental watering of drought refuges when needed during dry periods.
			Deliver water for the environment to drought refuge areas during dry periods, in line with the Victorian Environmental Water Holder's annual seasonal watering plans.	The volume (ML) of water delivered and number of pools receiving water depends on stream conditions and annual watering entitlements.	**Wimmera CMA.** Victorian Environmental Water Holder. GWMWater. Barengi Gadjin Land Council.	Annual seasonal watering plans. *Wimmera CMA's Dry Conditions Action Plan (2025).*	New action.
			Prepare site management plans for drought refuge areas, identifying measures to enhance habitat and reduce threats to environmental values, complementing provision of water for the environment.	1 plan.	**Wimmera CMA.** Victorian Environmental Water Holder. GWMWater. Barengi Gadjin Land Council.		New action.

Implementation plan - Upper Catchment Wetlands

This Implementation Plan outlines actions to protect, restore and enhance wetlands in the Upper Catchment local area. Recognising that many wetlands occur on private land, key management actions focus on supporting landholders to care for wetlands on private land through education, technical advice, incentives and stewardship opportunities. The plan also prioritises the control of pest animals and invasive weeds that threaten wetland condition and biodiversity values on public land. By working collaboratively with landholders, these management activities will help reduce environmental threats, improve habitat quality, and support the long-term resilience of wetland ecosystems.

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

Management theme	Table number
Water for the environment	Table 22
Reducing threats to wetlands and maintaining values.	Table 23
Supporting recreational access in balance with environmental and cultural values	Table 24

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
Critically endangered wetland community, Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains.
Support high biodiversity, particularly wetland plants, frogs, birds and invertebrates.
Support threatened plants and animals.
Strong cultural connections and values for Wotjobaluk Nations Peoples.
Community values and stewardship, including active community groups.
Recreational opportunities including walking, fishing, yabbying, camping, bird watching, water sports and duck hunting.
Economic values, including water supply, tourism and community events centred around wetlands.

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, drains and dams in the wetland basin and surrounds.
Invasive plants and pest animals.
Habitat degradation, including overgrazing and recreation impacts.
Introduction of nutrients from cropping practices in or beside the wetland.
Lack of connectivity, with narrow buffer areas generally surrounded by agricultural land.

Water for the environment

Table 22. Management actions associated with maintaining or improving the values of wetlands connected to the Wimmera Mallee Pipeline.

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 Wal Wal Swamp. (Pipeline wetlands are also present in the Hindmarsh and Yarriambiack and Buloke 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, including Wal Wal Swamp.	10 proposals (comprised of 1 proposal annually).	**Wimmera CMA.** GWMWater. Victorian Environmental Water Holder. Northern Grampians 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 Wetland, Wal Wal Swamp, 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.		
			Improve one internal pipeline outlet into Wal Wal Swamp to allow more efficient and effective supply of water.	1 outlet improved.	**Wimmera CMA.** Parks Victoria. GWMWater. Victorian Environmental Water Holder.		New action.

Reducing threats to wetlands and maintaining values.

Table 23. 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
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains. 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.
			Support private landholders to protect and manage wetlands on their properties by controlling stock access, reducing the impact of weeds and pest animals, and maintaining natural hydrology.	To be determined based on funding.	**Wimmera CMA.** Trust for Nature. Private landholders.	*Trust for Nature's Statewide Conservation Plan 2021-2030.* *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.	*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.** **Local Government.** Landcare.		

Supporting recreational access in balance with environmental and cultural values

Table 24. 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
Lake Fyans. Lake Lonsdale. Lake Bellfield. Lake Wartook.	**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.	Upgrade boating facilities in Wimmera catchment storages, for example by lengthening boat ramps.	To be determined.	**GWMWater.** **Fishing, Hunting and Outdoor Victoria.**		Continuation of existing arrangements.



WEST WIMMERA

IMPLEMENTATION PLAN

VICTORIA State Government Australia

Wimmera CMA

West Wimmera local area - overview

About the West Wimmera local area

The West Wimmera local area, located roughly halfway between Melbourne and Adelaide along the Victoria–South Australia border, is the largest region within the Wimmera catchment spanning 710,600 hectares. It contains the majority of the catchment's wetlands, which are highly diverse in type, vegetation, wildlife and waterbird species.

The region is geographically divided by the Little Desert, creating distinct northern and southern landscapes. South of the Little Desert National Park receives higher rainfall - around 615 mm per year - while the north is considerably drier, averaging around 475 mm per year and supporting fewer seasonal wetlands.

Edenhope is the largest town in the West Wimmera municipality, followed by Kaniva (see Figure 7**Error! Reference source not found.**). West Wimmera has approximately 4,000 residents. [36]

Agriculture is the primary land use and economic activity. Farming enterprises use 44% of West Wimmera for cropping and 25% for grazing of modified pastures. South of the Little Desert, broadacre cropping and sheep farming are most common. Irrigated crops and pasture cover about 5.5% of land. Nature conservation makes up 15.5% of land use. [37]

The West Wimmera region has the greatest use of groundwater for irrigation compared to other regions of the Wimmera catchment. This allows for the addition of water-dependent agriculture, such as vegetable production, in addition to cereals grown throughout the catchment. However, this can impact waterways and wetlands relying on this groundwater.

Given the abundance of wetlands, remnant vegetation and associated wildlife across West Wimmera, the area holds strong cultural connections for First Nations Peoples.

Rivers and streams

The Strategy recognises many small streams in West Wimmera. These streams are small and only flow following high-volume runoff. These include Thompson, Yalla, Koijak, Mosquito, Morambro and Naracoorte creeks which transport water into South Australia. In the northern part of West Wimmera, waterways are less common; however, chains of wetlands occur, such as those near Lawloit Ridge. Small creeks connect these wetland systems and larger waterways such as Tatiara and Nalang creeks may also flow west into South Australia, though typically only during very wet years.

In the area's south-west, Mosquito Creek feeds into the Ramsar-listed Bool and Hacks Lagoons in South Australia, making it a priority for the district. This stream has supported growling grass frogs (*Litoria raniformis*) and native fish, including the carp gudgeon (*Hypseleotris spp*) and flathead gudgeon (*Philypnodon grandiceps*). Historically, it had a reliable base flow from groundwater available, however this is now rare, which threatens the creek's ability to support water-dependent species in the future.

Wetlands

The West Wimmera is unique due to the myriads of seasonal wetlands in its landscape. While many wetlands are protected in parks and reserves, thousands of smaller, more seasonal wetlands exist on private land.

The West Wimmera local area is home to about 66% of the Wimmera's wetlands - more than 2,100. Many are shallow seasonal wetlands that fill following winter and spring rainfall and dry out during summer and early autumn. There are more than 50 saline wetlands and numerous deep, more permanent open freshwater bodies.

There is a large amount of native vegetation remaining in and south of the Little Desert. This provides good habitat connectivity on a north–south axis, with an alternating dune-swale system supporting hydrologically connected chains of wetlands in the swales and many of the larger patches of native vegetation connected via the dunes.

Many of region's wetlands are important for providing unique habitat for diverse bird species. Many species are threatened, including the brolga *(Antigone rubicunda)* and freckled duck *(Stictonetta naevosa)*. However, most wetlands are isolated and within extensive agricultural land. This has led to compounding threats and varying levels of capability to support ecological function.



Figure 7. West Wimmera local area. Information boxes are colour-coded by feature type: blue for rivers and streams and teal for wetlands.

Mosquito Creek and Tributaries and other west-flowing streams

Stream Values

Environmental values

Mosquito Creek and its tributaries are of high environmental value because they historically provide inflows into the Bool and Hacks Lagoons Ramsar Site in South Australia. Threatened species including Yarra pygmy perch *(Nannoperca obscura),* southern bell frogs *(Rainoidea raniformis)* and dwarf galaxias *(Galaxiella pusilla)* have been recorded in Mosquito Creek. The vulnerable yellow-bellied glider (*Petaurus australis*) has also been recorded in the creek's riparian vegetation, in Meereek State Forest and farmland. However, Mosquito Creek no longer, or rarely, receives base flow which reduces its ability to support these environmental values as it historically did.

Upper Mosquito Creek's riparian vegetation consists of Endangered Creekline Sedgy Woodland and Plains Woodland. Into the lower stretches, it transitions to Vulnerable Riparian Woodland with fragments of Plains Woodland and Endangered Creekline Grassy Woodland along its tributaries. Endangered Drainage-line Woodland and Escarpment Shrubland also exists along streams in the north towards the Little Desert National Park.

Cultural values

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

Social and recreational values

Seasonal duck hunting is permitted along specific sections of waterbodies and on public land in accordance with Game Management Authority guidelines.

Given the ephemeral nature of the West Wimmera's streams, social and economic values are limited. Local residents value the streams in their local areas.

Economic values

West Wimmera's streams struggle to receive sufficient water because of a combination of land modification, climate change and reduced groundwater. This limits their economic value due to their reduced ability to reliably support water supply for stock and domestic purposes and provide an outlet for tourism and recreation.

Stream condition

The 2010 Index of Stream Condition regarded West Wimmera local area rivers and streams as having insufficient data to gather accurate condition scores. Only one stream received a score, with the longest reach of the Mosquito Creek being in 'moderate' condition.

Threats and drivers of change

Hydrology - Climate change and dry conditions

Reports indicate Mosquito Creek previously had a consistent base flow supported by groundwater inflows. However, due to the increased demand for groundwater for irrigation, stock and domestic purposes and forestry in the region, along with reduced recharge, the water table has lowered beyond the creek's reach. This means Mosquito Creek flows intermittently, following sufficient rainfall generating runoff.

Weeds and pest animals

The Wimmera Invasive Plant and Animal Strategy identifies that the control of bridal creeper *(Asparagus asparagoides)*, other weeds and rabbits will improve the quality of remnant-threatened vegetation communities. [22]

South-west Wimmera and Northern Wimmera Plains (western section) Wetlands

Wetland Values

Environmental values

The substantial number of wetlands in the West Wimmera are of very high value. Long chains of wetlands provide connectivity for frogs, birds and native vegetation.

Many waterbirds, including threatened species such as brolgas (*Antigone rubicunda*) and freckled ducks (*Stictonetta naevosa)*, rely on these wetlands for habitat and breeding locations.

Saline lakes of the 'Natimuk-Douglas Chain of Lakes' provide unique habitat to support internationally significant numbers of bird species including banded stilts (*Cladorhynchus leucocephalus)*, red-capped plovers (*Charadrius ruficapillus)* and red-kneed doteralls (*Erythrogonys cinctus*). [38] These lakes also provide habitat for many migratory species including the 'endangered' common greenshank (*Tringa nebularia*), 'near-threatened' red-necked stint (*Calidris ruficollis),* 'vulnerable' sharp-tailed sandpiper *(Calidris acuminata*) and 'critically endangered' curlew sandpiper *(Calidris ferruginea)*. [39] These species are listed in international migratory bird agreements including Japan-Australia Migratory Bird Agreement, China-Australia Migratory Bird Agreement and the Republic of Korea-Australia Migratory Bird Agreement.

The region contains threatened Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains, listed as critically endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999.*

Extensive endangered Plains Woodland Ecological Vegetation Class interacts with most West Wimmera wetlands. There are also scattered depleted Brackish Lake Aggregates and Heathy Herb-rich Woodlands. [6]

Cultural values

Given the abundance of wetlands, remnant native vegetation and associated wildlife that remains across the West Wimmera there continues to be a strong connection between Country and First Nations Peoples. Lakes including Lake Ratzcastle are associated with significant Aboriginal cultural heritage values.

Social and recreational values

The West Wimmera is renowned for its wetlands and the filling of lakes after a season of heavy rain provides a spark for regional confidence, activity and tourism. Larger wetlands, including lakes Wallace, Charlegrark, Ratzcastle and Bringalbert, have significant regional recreational and social value.

Lake Wallace, at Edenhope, has annual events including the Edenhope Fishing Competition and the 'Henley on Lake Wallace' festival. Being a central focus of Edenhope, with 70 houses and many other facilities with lakeside views, it directly affects the amenity, tourism and liveability of the area. In 2022-23 total recreational water facility users totalled 16,100. [9]

Lake Charlegrark has only dried twice in recorded history - 1870-1877 and 2005-2009. It therefore provides a reliable outlet for recreation, particularly boating and angling. There are camping and water-activity facilities including powered camping and self-contained cottages. [9] The lake also hosts annual events including the Lake Charlegrark Country Music Marathon.

Lakes Bringalbert and Ratzcastle have less water reliability with fewer camping facilities compared to the other large lakes and receive lower numbers of recreational participants. But they too generate a district community 'buzz' for people keen to soak up social as well as environmental benefits that water provides.

Economic values

Lake Wallace makes the greatest economic contribution of West Wimmera lakes with a total contribution of $293,700 to the local economy. Lake Charlegrark follows with $174,600, then lakes Ratzcastle and Bringalbert with $30,600 and $49,000 respectively.

These lakes are a drawcard for tourism with over 70% of recreational users not living in the West Wimmera local area. [9]

Wetland condition

Native vegetation

Native vegetation in the region's many shallow seasonal wetlands is highly diverse, with water-dependent species booming during wet years. Most West Wimmera wetlands are located on agricultural land and where riparian native vegetation is highly fragmented.

Wetland monitoring shows that wetland vegetation conditions vary considerably, depending on the history of land use and management. Wetland vegetation on public land is typically in good to excellent condition, but varies more broadly on private land, with many grazed wetlands exhibiting good condition and diversity when wet, while cropped wetlands are in poor condition.

The presence of hollows in large trees including river red gums surrounding many lakes and wetlands provide nesting opportunities for arboreal mammals and hollow-nesting bird species such as the Critically Endangered South-eastern Red-tailed Black Cockatoo (*Calyptorhynchus banksii graptogyne*) and some waterbirds.

Habitat in the west of the region is known to support the vulnerable growling grass frog (*Litoria raniformmis*), with sightings increasing during wet years. (40)

Extensive endangered Plains Woodland Ecological Vegetation Class interacts with most West Wimmera wetlands. There are also scattered rare depleted Brackish Lake Aggregates and Heathy Herb-rich Woodlands. (6)

Threats and drivers of change

Climate change and dry conditions

In a drying and unpredictable climate with increasing water extraction, reduced water availability threatens water quality and its ability to support priority values.

The recreational opportunities provided by wetlands in the West Wimmera are strongly influenced by climate and land use. Many local wetlands, particularly those with small catchments, do not contain water for as long as they once did. For example, Lake Wallace at Edenhope has shown to be at risk of a changed hydrologic regime due to climate change and improved agricultural practices to retain soil moisture.(15)

Increased rainfall is also expected which risks excess nutrients from agricultural runoff entering wetlands promoting algal blooms. This can affect the recreational use of larger lakes. Lakes Wallace, Ratzcastle, Charlegrark and Bringalbert are the most popular lakes for recreation which have all been impacted by blue-green algae. The economic benefits from the lakes are affected by water levels and water quality.

Weeds and pest animals.

The Wimmera Invasive Plant and Animal Strategy identifies that control of bridal creeper, other weeds and rabbits will improve the quality of remnant threatened vegetation communities. (22) Landcare group members have observed deer populations growing and expanding into new areas, potentially impacting on waterways.

Ribbon weed affected the usability of Lake Wallace for recreation, impacting boat access.

Modifications

There are 2,174 wetlands in the West Wimmera and 610 of these have no modification. In 2017, 514 wetlands were cropped compared to 235 in 2004. Dams in wetlands increased from 786 to 963 between 2004 and 2017. The Victoria Land Cover Time Series indicates that between 1985 and 2019 seasonal wetlands reduced in area from 22,000 to 18,000 hectares.(25) This indicates there was a continued impact on wetlands natural processes during this period.

The cropping or modification of wetlands reduces their ability to provide environmental benefits. This is most evident in the West Wimmera's shallow seasonal wetlands. (41)

Impacts of recreation

Managing community access to waterways so that it is safe and does not impact on biodiversity, water quality and amenity of natural areas has been a focus for Wimmera CMA, councils and community groups.

The community has a strong desire to access public areas for recreation, particularly waterways. This access contributes to liveability and opportunities to improve the economy through tourism and recreation. For example, West Wimmera Shire Council and partner organisations developed a management plan for Lake Wallace to ensure the lake is developed and used in a way that sustains its values. (41)

Stakeholder and community feedback

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

- Mosquito Creek
- Tatiara Creek
- Lake Wallace
- Lake Charlegrark
- Lake Bringalbert
- Lake Ratzcastle
- Miga Lake

Stakeholders provided several suggestions to guide future waterway management across the local area. Key themes included:

- **Exploring alternative water supply options:** Some stakeholders supported investigating groundwater, pipeline connections and other integrated water management approaches to help improve water security for wetlands and reduce pressure on existing water sources.
- **Improving water quality and managing blue-green algae risks:** Stakeholders highlighted the need to reduce the occurrence and impacts of blue-green algae outbreaks in recreational lakes to protect environmental values, public health and recreational opportunities.
- **Protecting priority wetlands**: Some stakeholders supported identifying and protecting high-value wetlands, including shallow wetlands on private land, to maintain biodiversity, habitat values and ecological function.
- **Supporting landholder stewardship**: Stakeholders highlighted the importance of providing incentives, advice and engagement opportunities to encourage landholders to protect waterways and wetlands, including reducing stock access and limiting activities like cropping that degrade aquatic and riparian environments.
- **Managing invasive species:** Participants identified the ongoing management of pest plants and animals as a priority, with a focus on preventing the establishment and spread of invasive species that threaten environmental values.
- **Supporting recreational lake management:** Stakeholders expressed support for implementing and contributing to management plans for priority recreational lakes and facilities and infrastructure to balance environmental, recreational and community objectives. Participants highlighted the need for strategies that encourage appropriate recreational use of wetlands and reserves while minimising impacts on environmental and cultural values.

Priority areas for management

The Strategy identified the West Wimmera's priority areas for management:

- Wetlands with high environmental value
- Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains
- Mosquito Creek and tributaries
- Tatiara Creek and tributaries
- Wetlands with high social and economic value, including:
    - Lake Wallace
    - Lake Charlegrark
    - Lake Ratzcastle
    - Lake Bringalbert

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.

West Wimmera local area - Implementation plan

The following tables outline management actions for the Mosquito Creek and tributaries and other west-flowing streams and wetlands in the south-west Wimmera and the western section of the Northern Wimmera Plains.

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 West Wimmera 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.



Native herb, spike centaury (Schenkia australis), at Lake Wallace.

Implementation plan - Mosquito Creek and tributaries and other west-flowing streams

This Implementation Plan maintaining and improving where possible the ecological values of the Mosquito Creek and tributaries and other west-flowing streams, especially Tatiara Creek. A key focus is enhancing riparian habitat, strengthening landscape connectivity and improving ecosystem resilience through targeted on-ground works and long-term stewardship.

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

Management theme	Table number
Enhancing riparian habitat, landscape connectivity and resilience.	Table 25

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
Catchment area feeding the Bool and Hacks Lagoons Ramsar Site in South Australia.
Threatened species, including Yarra pygmy perch, southern bell frogs and dwarf galaxias.
Threatened native vegetation communities.
Strong community connection to waterways.

Key threats addressed by this implementation plan
Reduced flows from climate change, drought and altered water regimes.
Grazing by stock.
Invasive plants and pest animals.

Enhancing riparian habitat, landscape connectivity and resilience

Table 25. 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
Mosquito Creek and tributaries. Tatiara Creek and tributaries.	**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 habitat extent and the condition of river red gum communities are maintained or improved. The connectivity of riparian habitat is maintained or improved, enabling the movement and dispersal of terrestrial species.	Support private landholders to protect and manage riparian areas on their properties by managing stock access and controlling weeds, foxes and rabbits.	10 km. 50 ha.	**Wimmera CMA.** Private landholders. Trust for Nature.	*Wimmera Proportion of Waterways Protected – Stage 2 (2024).* *Wimmera Invasive Plant and Animal Management Strategy (2019).* *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.	50 ha (annually) of pest animal control.	**Wimmera CMA.** Public land managers. Agriculture Victoria. Landcare groups. Private landholders.		
			Reduce the impact of weeds on riparian vegetation by controlling problem weeds.	50 ha (annually) weed control (woody and non-woody).			

Implementation plan - South-west Wimmera and Northern Wimmera Plains Wetlands

This Implementation Plan focuses on maintaining and improving where possible the ecological values of wetlands in the south-west Wimmera and the western section of the Northern Wimmera Plains. 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
Reducing threats to wetlands and maintaining values.	Table 26
Supporting recreational access in balance with environmental and cultural values	Table 27

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 concentration and diversity of wetland types and associated plants and animals, forming a major wetland complex.

Critically endangered wetland community, Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains.

Support high biodiversity, particularly wetland plants, frogs, birds and invertebrates.

Support threatened plants and animals, including nationally threatened growling grass frogs, and provide breeding habitat for threatened brolgas.

Frequently co-located with **endangered buloke vegetation communities**.

Strong cultural connections and values for Wotjobaluk Nations Peoples.

Community values and stewardship, including active community groups.

Recreational opportunities including walking, fishing, yabbying, camping, bird watching, water sports and duck hunting.

Economic values, including water supply, tourism and community events centred around wetlands.

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, drains and dams in the wetland basin and surrounds.

Cropping of the wetland basin and riparian zone.

Invasive plants and pest animals.

Habitat degradation, including overgrazing and recreation impacts.

Introduction of nutrients from cropping practices in or beside the wetland.

Lack of connectivity, with narrow buffer areas generally surrounded by agricultural land.

Reducing threats to wetlands and maintaining values.

Table 26. 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
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains. 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.
			Support private landholders to protect and manage wetlands on their properties by controlling stock access, reducing the impact of weeds and pest animals, and maintaining natural hydrology.	80 ha (annually). 10 permanent conservation covenants.	**Wimmera CMA.** Trust for Nature. Private landholders.	*Trust for Nature's Statewide Conservation Plan 2021-2030.* *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.	50 ha (annually).	**Wimmera CMA.** **Parks Victoria.** **DEECA – Public land management.** **Barengi Gadjin Land Council.** Landcare.	*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.	50 ha (annually).			
			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.		

Supporting recreational access in balance with environmental and cultural values

Table 27. 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
Large public wetlands including: Lake Wallace. Lake Charlegrark. Lake Ratzcastle. Lake Bringalbert.	**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.	Improve infrastructure and sustainable management of recreational lakes.	To be determined.	**West Wimmera Shire Council.** **Committees of Management.** **Public land managers.** Wimmera CMA.	*Conservation Action Plan for parks and reserves managed by Parks Victoria – Wimmera.* *Lake Wallace Strategic Plan 2022-2032.*	New action.
			Increase recreational user awareness of low impact recreation at wetlands.	To be determined.	**Wimmera CMA.** **DEECA.** **Parks Victoria.** Landcare.		New action.
Lake Wallace.			Manage ribbon weed to enable boating access for recreational fishing.	As required. 1 partnership.	**West Wimmera Shire Council.** Wimmera CMA.	*Lake Wallace Strategic Plan 2022-2032.*	Continuation of existing work.
Lake Charlegrark.			Develop a management plan for Lake Charlegrark to support sustainable social, economic, cultural and environmental outcomes.	1 management plan.	**Lake Charlegrark Foreshore Committee.** **Parks Victoria.** West Wimmera Shire Council. Wimmera CMA.		New action.
Lake Bringalbert.			Develop a management plan for Lake Bringalbert to support sustainable social, economic, cultural and environmental outcomes.	1 management plan.	**Bringalbert Foreshore Committee.** **Friends of Lake Bringalbert.** **Parks Victoria.** West Wimmera Shire Council. Wimmera CMA.		New action.



YARRIAMBIACK & BULOKE

IMPLEMENTATION PLAN

VICTORIA State Government Australia

Wimmera CMA

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.

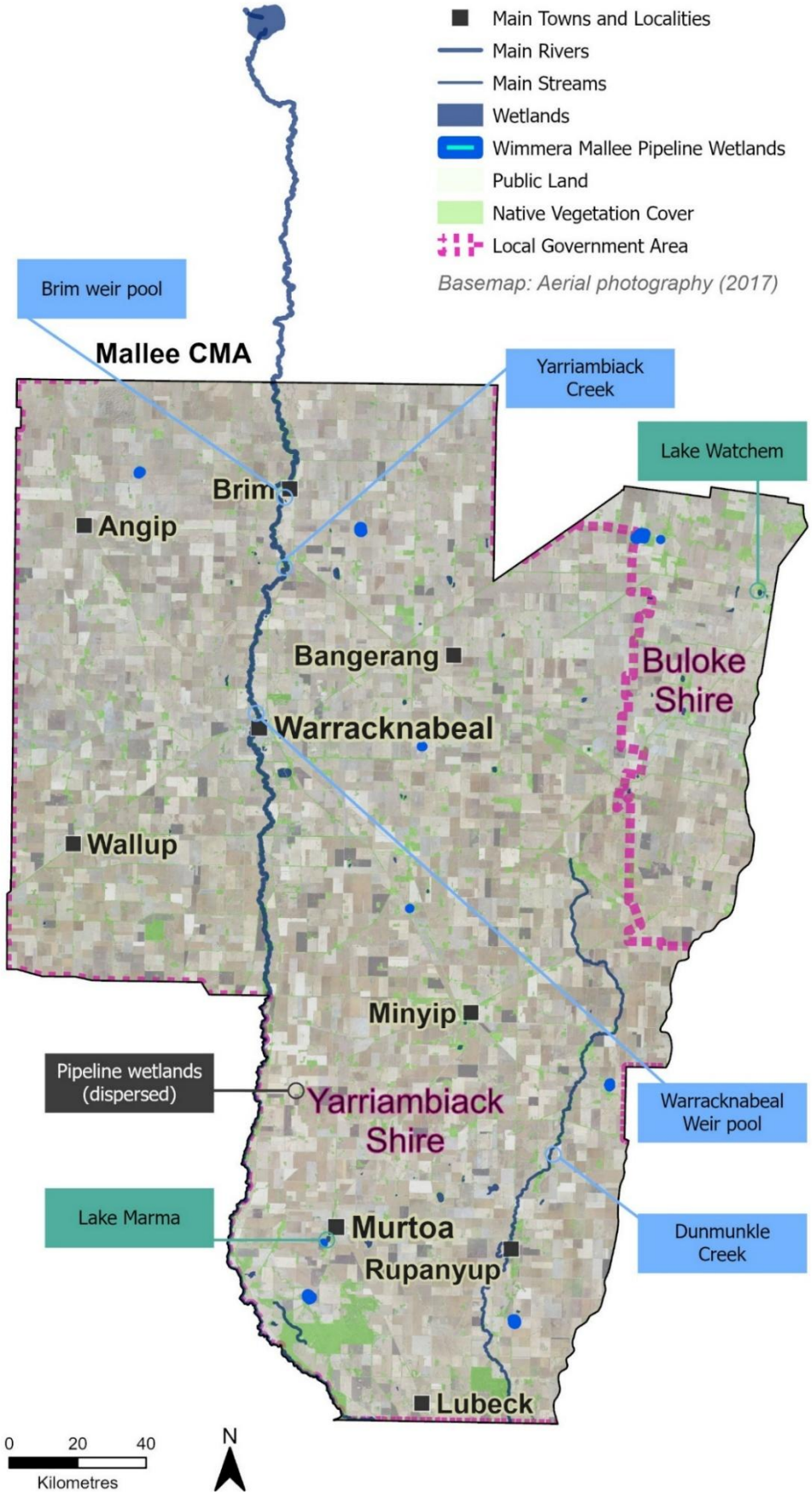


Figure 8. Yarriambiack and Buloke local area and some of its waterway assets. Information boxes are colour-coded by feature type: blue for rivers and streams and teal for wetlands.

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.		

Key management topics - Implementation plan

This section addresses key issues that affect waterways across the entire Wimmera catchment, rather than specific local areas. These topics represent broad-scale challenges and opportunities that require coordinated management to protect environmental, cultural, social and economic values.

The section covers themes such as supporting First Nations Peoples' self-determination, waterway-based recreation, water quality, fire preparedness and recovery, blue-green algae management, native fish conservation, platypus recovery and birdlife protection.

For each topic, this section outlines the current context, major threats and desired medium-term outcomes, supported by evidence and examples of ongoing initiatives.

Collaborating with First Nations Peoples and supporting self-determination

The Strategy's desired outcomes are**:**

- **Long-term (>20-year):** Knowledge and experience of First Nations Peoples is informing waterway planning, management and delivery in the Wimmera, advancing self-determination.
- **Medium-term (<10-year):** Ongoing collaboration and two-way learning in waterway planning and management, supporting self-determination and strengthening partnerships with First Nations Peoples.

Achieving these outcomes will mean that waterway planning and management occur in genuine partnership with First Nations Peoples. Registered Aboriginal Parties in the Wimmera, Barengi Gadjin Land Council and Eastern Maar Aboriginal Corporation, will be empowered to embed their knowledge, cultural values, and priorities in decision-making in self-determined ways.

Collaborative partnerships will support self-determination through ongoing respectful two-way learning, where cultural knowledge and scientific evidence are equally valued and inform practice.

Agencies will demonstrate strong capability in culturally informed engagement and collaborative waterway management.

This approach will result in waterway management that reflects and prioritises cultural values alongside environmental, social and economic outcomes; upholds the rights and aspirations of First Nations People; and achieves more sustainable, inclusive and place-based outcomes.

Table 33 includes management actions that seek to achieve these outcomes.

Additional specific opportunities for collaborating with First Nations Peoples on planned waterway activities are identified in local area sections of this Plan.

Table 33. Implementation actions for collaborating with First Nations Peoples and supporting self-determination regarding waterway management.

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. **MO7.** Healthier waterways enable more On Country activities for First Nations Peoples.	Waterway planning and management is developed collaboratively with First Nations organisations, Barengi Gadjin Land Council and Eastern Maar Aboriginal Corporation, with evidence of shared priority-setting and decision-making. First Nations organisations determine how, when and to what extent they partner in waterway planning and management, consistent with their rights, aspirations and governance structures. Partnerships with Barengi Gadjin Land Council and Eastern Maar Aboriginal Corporation are characterised by trust, respect, transparency and shared accountability. Waterway plans and projects demonstrate the integration of cultural values, cultural knowledges and scientific evidence. Knowledge sharing is respectful and contributes to improved decision-making. Agency staff demonstrate increased cultural capability, confidence and competence in working collaboratively with First Nations Peoples. Policies, systems and processes support culturally informed engagement and partnership approaches.	Meet regularly to discuss waterway plans, strategies, projects and initiatives.	As agreed by the parties.	**Wimmera CMA, Barengi Gadjin Land Council.**	*Water is Life: Traditional Owner Access to Water Roadmap (2022) and Nation Statement - Barengi Gadjin Land Council.* *Growing What is Good (Dya) Country Plan (2026).*	Continuation of existing arrangements.
				Wimmera CMA. Eastern Maar Aboriginal Corporation.	*Water is Life: Traditional Owner Access to Water Roadmap (2022) and Nation Statement in - Eastern Maar Aboriginal Corporation.* *'Meerreengeeye Ngakeepoorryeeyt' Eastern Maar Country Plan (2015).*	Building a relationship.
		Collaborate on opportunities to build two-way knowledge and capacity to implement waterway-related actions on Country including, for example, disaster preparedness, response and recovery, riverbank and tree management, cultural burning, aquatic species.	As opportunities arise.	**Wimmera CMA. Barengi Gadjin Land Council. Eastern Maar Aboriginal Corporation.**	*Water is Life: Traditional Owner Access to Water Roadmap (2022) and Nation Statements.* Country Plans.	Continuation of existing arrangements.

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**
		Support employment and training opportunities for First Nations Peoples.	When funding is available.	**Wimmera CMA.** Barengi Gadjin Land Council. Eastern Maar Aboriginal Corporation.	*Water is Life: Traditional Owner Access to Water Roadmap (2022) and Nation Statements.* Country Plans.	Continuation of existing arrangements.
		Support Barengi Gadjin Land Council and Eastern Maar Aboriginal Corporation to operate as the lead organisations for advice related to cultural heritage and other cultural considerations.	As relevant.	**Wimmera CMA.** Barengi Gadjin Land Council. Eastern Maar Aboriginal Corporation.	*Water is Life: Traditional Owner Access to Water Roadmap (2022) and Nation Statements.* Country Plans.	
		Collaborate on activities that advance Barengi Gadjin Land Council's self-determination, including strategic management of property along the Datchak Creek at Antwerp, as well as other culturally significant sites.	Ongoing collaboration.	**Barengi Gadjin Land Council.** Wimmera CMA	*Growing What is Good (Dya) Country Plan (2026).*	

Water for the environment

Local area sections of this Plan include targeted actions for managing water for the environment in priority areas to help maintain and enhance native biodiversity, habitat quality, ecosystem connectivity and the function of rivers, streams and wetlands as drought refuges. The management action below seeks to provide an overarching, catchment-wide framework to guide management of water for the environment and decision-making during periods of dry conditions and water scarcity.

Table 34: Implementation actions supporting decision making for water for the environment.

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**
Barringgi Gadyin (Wimmera River) (regulated reaches). Mount William Creek. MacKenzie River, Burnt Creek, Bungalally Creek. Mount Cole Creek. Thirteen Wimmera Mallee pipeline wetlands.	**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. **MO5.** Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values. **MO7.** Healthier waterways enable more On Country activities for First Nations Peoples.	Water for the environment supports healthy, connected and resilient river and wetland ecosystems by maintaining or improving native fish populations, vegetation communities, habitat quality, water quality, waterbird values and drought refuge function.	Develop a decision framework to guide the management of water for the environment during dry conditions. Considerations include triggers, priority areas and delivery options, to support key ecological values and maintain waterway functions.	1 decision framework.	**Wimmera CMA.** Victorian Environmental Water Holder. Commonwealth Environmental Water Holder. GWMWater. Barengi Gadjin Land Council.	*Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024).* *Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks (2025).* *Environmental Water Management Plan – Wimmera Mallee Pipeline Wetlands – Wimmera CMA Region (2016).* Annual seasonal watering plans issued by the Victorian Environmental Water Holder. *Wimmera CMA's Dry Conditions Action Plan (2025).*	This is a complementary action to support other planning and guidance documents including annual seasonal watering proposals and dry contingency inflow plans/dry conditions action plans.

Fire preparedness, response and recovery

Climate change is increasing the risk of more frequent, severe and extensive bushfires across Victoria, with implications for the Wimmera's water catchments, waterways and water supplies. Bushfires can have significant and long-lasting impacts on river, stream and wetland health by increasing erosion, sediment and nutrient runoff, degrading water quality and aquatic habitat, and affecting water yields. These impacts can threaten the environmental, cultural, social and economic values that healthy waterways provide.

Recent events, including the 2024 Bayindeen fire and previous fires in the Gariwerd (Grampians National Park) region, have highlighted the vulnerability of the Wimmera's waterways and water supply infrastructure to post-fire impacts. The consequences of major fires can extend well beyond the fireground, affecting downstream communities, water users and ecosystems through reduced water quality and increased recovery and management costs.

Recognising these risks, effective bushfire prevention, preparedness, response and recovery require a coordinated approach involving fire agencies, water corporations, land managers, catchment management authorities, First Nations Peoples, local government and communities. This Plan supports actions that strengthen catchment resilience, protect water-dependent values and support coordinated recovery efforts to minimise the impacts of bushfires on waterways and water supplies. This supports the long-term (>20-year) desired outcome and medium-term outcome in Table 35.

Long-term desired outcome (>20-year):
Water is of sufficient quality to support waterway values and uses at important areas for water supply, cultural, environmental and social values.

Table 35. Implementation actions for fire preparedness, response and recovery.

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**
Priority areas in forested catchments: • Upper Barringgi Gadyin (Wimmera River). • Lake Bellfield catchment. • Lake Wartook catchment. • Mount William Creek catchment.	**MO5.** Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values.	Water for the environment supports healthy, connected and resilient river and wetland ecosystems by maintaining or improving native fish populations, vegetation communities, habitat quality, water quality, waterbird values and drought refuge function.	Forest Fire Management Victoria working with relevant authorities and community to develop preparedness, response and recovery action plans to minimise the risk of bushfire to water quality and waterway values.	1 plan.	**Forest Fire Management Victoria (Wimmera).** Wimmera CMA. Barengi Gadjin Land Council. Parks Victoria. GWMWater. Local community members.	*Emergency Preparedness and Response Plan for Biodiversity and Agricultural Natural Capital Assets in the Wimmera region (2024).*	New action, representing an approach to planning led by Forest Fire Management Victoria.

Water quality

Access to clean water is critical for environmental health, community wellbeing and the Wimmera's farming and industrial sectors. Towns and farms rely on high-quality water for drinking, sanitation, stock watering, crop spraying, industry and maintaining public spaces. Poor water quality can trigger algal blooms and fish deaths, harming ecosystems and disrupting recreation such as fishing and swimming. Freshwater species, like fish, plants and macroinvertebrates, are especially vulnerable.

Local area sections of this Plan include specific actions tailored to priority areas. Table 36Table 36 includes water quality actions that include multiple local areas, including establishing interim targets for waterway locations identified in the Strategy to address threats posed by poor water quality, and where waterway managers can feasibly make a difference to achieve the targets. The table also includes support for water quality monitoring and education involving Waterwatch volunteers and school children.

Management actions are shaded green for high priority and orange for medium priority. Actions with no shading are low priority.

Table 36. Implementation actions for water quality

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**
Barringgi Gadyin (Wimmera River) at: • Glenorchy. • Horsham weir pool. • Dimboola weir pool.	**MO5.** Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values.	Sediment and nutrient risks to water quality are minimised through proactive erosion control, stock exclusion and riparian native vegetation establishment. Where possible, salinity and dissolved oxygen levels are effectively managed to reduce risks to native fish, instream and riparian vegetation and recreation and amenity values in the Barringgi Gadyin (Wimmera River) and weir pools. Where flow conditions can be influenced, the frequency, duration and severity of hypoxic events is managed to reduce risks to native fish and recreation and amenity values in the Lower Barringgi Gadyin (Wimmera River) and weir pools. Where possible, nutrient levels are effectively managed to reduce the risk of blue-green algae blooms impacting native fish, recreation and amenity values in the Lower Barringgi Gadyin (Wimmera River) and weir pools.	Establish interim water quality targets at priority sites identified in the *Wimmera Waterway Strategy*.	Water quality targets established for 3 priority sites by 2030.	**Wimmera CMA.** GWMWater. DEECA Environment Protection Authority Victoria.	*Victoria's Environment Reference Standards*. Former *State Environment Protection Policy (Waters) 2018.*	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**
Priority areas. Lower Barringgi Gadyin (Wimmera River).	**MO5.** Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values. **MO10.** Stewardship increases, with more people taking action to care for waterways.	More community members and groups are actively participating in the protection, restoration and management of waterways across the Wimmera.	Support Waterwatch volunteers to collect water quality data.	Active Waterwatch volunteers are supported with resources annually.	**Wimmera CMA.** Waterwatch volunteers. Jeparit Waterwatch group.	Waterwatch Program	Continuation of work under the previous regional waterway strategy.
			Provide waterway-based education in schools, particularly via the River Detectives program.	To be determined.	**North Central CMA.** Wimmera CMA.	River Detectives program.	

Blue-green algae

Blue-green algae (cyanobacteria) blooms occur when favourable conditions, such as elevated nutrient levels, warm temperatures and low flows, allow algae to rapidly increase in abundance. These blooms can produce toxins that affect human and animal health, aquatic ecosystems and recreational use of waterways, resulting in significant social, environmental and economic impacts. Waterways across the Wimmera, including recreational lakes, weir pools and sections of the Barringgi Gadyin (Wimmera River), are susceptible to outbreaks, particularly during dry periods. Blue-green algae blooms impact recreational use of waterways, cause environmental damage and impact on availability of water for the environment releases from storages when impacted by blooms, leading to reduced achievement of watering outcomes.

Managing blue-green algae requires a coordinated, long-term approach involving research, partnership-based planning and integrated catchment management. While GWMWater leads monitoring and response under the *Regional Blue-Green Algae Coordination Plan*, Wimmera CMA contributes by supporting improved understanding of bloom drivers and management options, facilitating collaboration between stakeholders, and integrating blue-green algae considerations into broader waterway and catchment management activities. These actions complement on-ground works and environmental water management aimed at improving water quality and building the resilience of waterways to future outbreaks, which are expected to become more frequent under a changing climate.

Table 37: Implementation actions for Blue-green algae

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**
Barringgi Gadyin (Wimmera River) weir pools at Horsham, Dimboola and Jeparit. Yarriambiack Creek weir pools at Warracknabeal and Brim. Priority lakes including: Lake Wallace. Green Lake. Dock Lake. Lake Toolondo. Lake Marma Lake Charlegrark. Nhill Lake.	**MO5.** Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values. **MO6.** Waterways identified as high priority for recreation and amenity provide enhanced recreational opportunities and community benefits, while minimising impacts on their environmental values.	Where possible, nutrient levels are effectively managed to reduce the risk of blue-green algae blooms impacting native fish, recreation and amenity values. High-priority recreational waterways provide safe, inclusive and well-maintained access that supports a range of recreational activities.	Monitor for new developments and innovation for preventing and treating blue-green algal blooms. Work with responsible organisations to facilitate actions preventing or treating blue-green algae if viable and cost-effective processes or products are available and appropriate.	Biannual Australia and New Zealand Cyanobacteria Workshops. Monitoring latest research and development.	**GWMWater.** **Wimmera CMA.** Local government. Parks Victoria. International and national water-research agencies.	*Regional Blue-Green Algae Coordination Plan.*	Continuation of existing arrangements.

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
Barringgi Gadyin (Wimmera River) weir pools at Horsham, Dimboola and Jeparit. Yarriambiack Creek weir pools at Warracknabeal and Brim. Priority lakes including: Lake Wallace. Green Lake. Dock Lake. Lake Toolondo. Lake Marma Lake Charlegrark. Nhill Lake.	**MO5.** Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values. **MO6.** Waterways identified as high priority for recreation and amenity provide enhanced recreational opportunities and community benefits, while minimising impacts on their environmental values.	Where possible, nutrient levels are effectively managed to reduce the risk of blue-green algae blooms impacting native fish, recreation and amenity values. High-priority recreational waterways provide safe, inclusive and well-maintained access that supports a range of recreational activities.	Monitor water quality to inform management decisions, especially when conditions pose a higher risk of blue-green algae such as after storm runoff and the potential of increased nutrient loads (higher risk with climate change).	Monitoring based on observational reports and environmental conditions.	**GWMWater.** Local government. Wimmera CMA. Local waterway managers.	*Regional Blue-Green Algae Coordination Plan.*	Continuation of existing arrangements.
			Implement landowner education programs to minimise nutrient run-off from properties.	To be determined.	**Wimmera CMA.** **Agriculture Victoria.** GWMWater.	*Wimmera Regional Catchment Strategy (2021).*	Continuation of existing arrangements.

Native fish, freshwater crayfish and freshwater mussels

Native fish, freshwater crayfish and mussels are important components of the Wimmera's aquatic ecosystems and hold significant environmental, cultural, social and economic value. The region supports a diverse range of native fish species, including river blackfish, southern pygmy perch, obscure galaxias, Australian smelt and carp gudgeon, as well as recreationally important species such as golden perch, silver perch, freshwater catfish and Murray cod. Wimmera waterways also provide habitat for freshwater mussels and threatened freshwater crayfish, including western swamp crayfish and Glenelg spiny crayfish. Barengi Gadjin Land Council has identified freshwater crayfish and mussels as priority species of high cultural significance, highlighting the importance of improving understanding and management of these species in partnership with First Nations Peoples, and supporting self-determination.

Protecting and improving habitat is fundamental to supporting resilient populations of native fish, freshwater crayfish and mussels. Healthy waterways with suitable water quality, flow regimes, habitat complexity and connectivity provide the conditions these species need to feed, breed and persist over the long term. Management of water for the environment plays an important role by maintaining aquatic habitat and water quality and, where conditions allow, supporting breeding and recruitment opportunities for native fish. Environmental water and complementary on-ground actions aimed at improving habitat and connectivity for species such as river blackfish, southern pygmy perch and obscure galaxias are identified within the relevant local area implementation plans of this Strategy.

This section of the implementation plan focuses on actions to reduce threats such as introduced fish and foundational work to guide future decision-making, including knowledge generation and partnership-based planning to support native fish such as river blackfish, freshwater crayfish and mussels. Consistent with Wimmera CMA's role in coordinating and facilitating waterway management, actions include establishing and maintaining partnerships to facilitate research to address key knowledge gaps, monitoring to improve understanding of species distribution and habitat requirements, and collaboration with First Nations Peoples, agencies and community partners to identify priorities and guide future management. This foundational work will inform and complement on-ground restoration activities and environmental water management, helping to target future investment towards actions that provide the greatest benefit for these culturally and ecologically significant species.

Management actions are shaded green for high priority and orange for medium priority. Actions with no shading are low priority.

Native fish breeding

Water for the environment releases help maintain water quality, habitat and connectivity for native fish and other aquatic species. Water releases may be used to support fish breeding and recruitment where conditions are suitable and in line with environmental water management objectives.

In November 2021, Wimmera CMA staff observed spawning behaviour in golden perch and silver perch in the Barringgi Gadyin (Wimmera River) below the Horsham weir - an unusual event as, unlike freshwater catfish, these species are not known to breed in this system. The behaviour coincided with several days of increased flows following spring rainfall.

To replicate the flow conditions thought to trigger native fish breeding, water for the environment was released in November 2023 and 2024 under the Victorian Environmental Water Holder's annual seasonal watering plans. These flows were designed using the conditions observed in 2021 and guided by the *Wimmera Native Fish Management Plan*.

Although no spawning was detected during the 2023 and 2024 flows, Wimmera CMA and stakeholders remain interested in further testing and refining this approach when conditions are favourable. The aim is to improve aquatic habitat and breeding conditions for small-bodied native fish, while also providing potential benefits for larger-bodied species, such as golden perch and freshwater catfish.

Successful spawning relies on the right environmental conditions and is strongly influenced by climate factors such as rainfall and temperature. Future implementation will depend on water availability, the capacity to meet other water for the environment outcomes and environmental conditions like water temperature. Any future releases will be planned through the Victorian Environmental Water Holder's annual seasonal watering planning process, in consultation with regional stakeholders.

This work aligns with the priorities of both the *Wimmera Native Fish Management Plan* and the Barringgi Gadyin (Wimmera River)'s environmental water management plan, which aim to improve the resilience and diversity of native fish populations.

Table 38. Implementation actions for the Wimmera's native fish, freshwater mussels and freshwater crayfish.

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**
MacKenzie River. Burnt Creek. Mount William Creek. Mount Cole Creek. Glenlofty Creek. Barringgi Gadyin (Wimmera River). Priority wetlands.	**MO8.** Key water-dependent species are supported in waterways that provide suitable habitat, including during dry conditions.	A viable breeding population of river blackfish is sustained in the MacKenzie River. Viable and self-sustaining breeding populations of river blackfish are established in waterways with suitable habitat.	Support research to increase understanding of successful river blackfish breeding in captivity to support restoration and recovery of blackfish and ecosystem functioning in suitable Wimmera waterway habitat.	Complete a breeding-research project with Fishing, Hunting and Outdoor Victoria, Snobs Creek Conservation Hatchery, by 2028.	**Partnership:** **Fishing, Hunting and Outdoor Victoria.** **Wimmera CMA.** Barengi Gadjin Land Council. Native Fish Australia Wimmera Branch. Arthur Rylah Institute for Environmental Research.	*Wimmera Native Fish Management Plan 2022.* *Victorian Fisheries Authority-Freshwater Fisheries Management Plan 2018-2028.* *Biodiversity 2037.*	A funded project from until 2028.
			Investigate potential release sites for hatchery-bred river blackfish and other small-bodied native fish.	One investigation completed.			Underway - continuation of previous actions.
			Investigate habitat enhancements that support small-bodied native fish and implement actions informed by the findings.	One investigation.			New action.
			Monitor river blackfish survival and recruitment at translocation sites.	Annual monitoring of two waterways and two dams.			Underway - continuation of previous actions.
			Investigate management options with Fishing, Hunting and Outdoor Victoria to reduce predatory impacts of trout and redfin.	1 investigation.			New action.
			During dry periods, work with relevant agencies to support translocation of small-bodied native fish from stressed and drying pools to more secure waterway sites, where feasible.	Dependent on seasonal climate conditions and feasibility.	**Partnership:** **Wimmera CMA.** **Fishing, Hunting and Outdoor Victoria.** Arthur Rylah Institute for Environmental Research.	Annual Wimmera Seasonal Watering Plans. *Wimmera CMA's Dry Conditions Action Plan (2025).*	Standard procedure.

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**
Barringgi Gadyin (Wimmera River). Mount William Creek. MacKenzie River. Burnt Creek. Yarriambiack Creek weir pools at Jung, Warracknabeal and Brim. Priority Wimmera lakes.	**MO8.** Key water-dependent species are supported in waterways that provide suitable habitat, including during dry conditions.	The impacts of carp and overall biomass of carp are reduced, where feasible, resulting in improved aquatic habitat condition and better outcomes for native fish populations.	Undertake targeted carp control in priority areas to protect river blackfish and small-bodied native fish.	Annual assessment of carp proliferation and targeted control actions.	**Wimmera CMA.** Barengi Gadjin Land Council. Fishing, Hunting and Outdoor Victoria. GWMWater. DEECA.	*Wimmera Native Fish Management Plan (2022).* *Wimmera Carp Management Plan (2020).*	New action, building on previous work.
			Act if and as directed as part of national biological carp control involving the use of cyprinid herpes virus 3 (carp virus).	Follow *National Carp Control Plan* roll-out.	**Department of Agriculture Fisheries and Forestry.** **Fishing, Hunting and Outdoor Victoria.** DEECA. Wimmera CMA.	*National Carp Control Plan.* *Wimmera Carp Management Plan (2020).* *Wimmera Native Fish Management Plan (2022).*	Further investigation and research occurring.
Barringgi Gadyin (Wimmera River). Mount William Creek. MacKenzie River. Burnt Creek. Other suitable waterways.	**MO8.** Key water-dependent species are supported in waterways that provide suitable habitat, including during dry conditions.	Where possible, waterway conditions suitable for supporting native fish breeding in the Wimmera River and other streams are supported, including for golden perch.	Explore the potential of creating waterway-flow regimes that promote natural spawning of native fish.	One investigation completed.	**Wimmera CMA.** Fishing, Hunting and Outdoor Victoria. Victorian Environmental Water Holder.	*Wimmera Native Fish Management Plan (2022).*	Underway - continuation of previous work.

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**
Barringgi Gadyin (Wimmera River) and tributaries. MacKenzie River, Burnt and Bungalally Creeks.	**MO8.** Key water-dependent species are supported in waterways that provide suitable habitat, including during dry conditions.	Freshwater mussel locations, population size and habitat requirements in the Wimmera are known. Feasible future actions and locations for freshwater mussels are identified, supporting management decisions regarding actions to maintain and improve habitat.	Improve understanding and management of freshwater mussel populations in the Wimmera by assessing distribution, abundance and species composition. Evaluate the feasibility and benefit of management actions if required and use this information to identify and prioritise locations for the greatest population recovery outcomes.	1 investigation	**Barengi Gadjin Land Council.** **Wimmera CMA.** Research agencies or institutions.		New action – foundational activity to support future actions, identified as a priority by Barengi Gadjin Land Council.
MacKenzie River and Burnt Creek. Mount William Creek and tributaries. Upper Barringgi Gadyin (Wimmera River) and tributaries.	**MO8.** Key water-dependent species are supported in waterways that provide suitable habitat, including during dry conditions.	Freshwater crayfish locations, population size and habitat requirements in the Wimmera are known. Feasible future actions and locations for freshwater crayfish are identified, supporting management decisions regarding actions to maintain and improve habitat.	Improve understanding and management of freshwater crayfish populations in the Wimmera by assessing distribution, abundance and species composition. Evaluate the feasibility and benefit of management actions if required and use this information to identify and prioritise locations for the greatest population recovery outcomes.	1 investigation	**Barengi Gadjin Land Council.** **Wimmera CMA.** Research agencies or institutions.		New action – foundational activity to support future actions, identified as a priority by Barengi Gadjin Land Council.

Platypus

Wimmera CMA is preparing an evidence-based *Wimmera Platypus Management Plan* that identifies barriers to platypus population growth and outlines actions to support their long-term conservation. The Plan's focus is on:

- Protecting the existing core platypus population in the MacKenzie River.
- Supporting expansion of the existing population in connecting waterways, where feasible.
- Establishing a second population to improve long-term viability.
- Supporting delivery of the region's 10-year outcome for platypus as a priority water-dependent native species.

This Plan focuses on finalizing the development of the platypus management plan and implementing it's actions.

Management actions are shaded green for high priority and orange for medium priority. Actions with no shading are low priority.

Table 39. Implementation actions for the Wimmera's platypus population.

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**
MacKenzie River. Barringgi Gadyin (Wimmera River). Fyans Creek. Mount Cole Creek. Mount William Creek.	**MO8.** Key water-dependent species are supported in waterways that provide suitable habitat, including during dry conditions.	A viable breeding population of platypus is sustained in the upper MacKenzie River. Platypus recovery opportunities are provided through improved riparian habitat and flow management in suitable Barringgi Gadyin (Wimmera River) habitat. A second population of platypus is established in a waterway with suitable habitat.	Develop and implement a platypus management plan for the Wimmera region.	1 plan developed.	**Wimmera CMA.** Barengi Gadjin Land Council. Cesar Australia. Parks Victoria. DEECA. Victorian Environmental Water Holder.	*Wimmera Platypus Management Plan (Draft - 2026).* *Greater Gariwerd Landscape Management Plan (Parks Victoria, 2021).* Action statement. *Flora and Fauna Guarantee Act 1988.* Platypus (*Ornithorhynchus anatinus*).	Underway – draft plan developed.
			Monitor the distribution, abundance and health of the platypus population in accordance with the platypus management plan.	To be determined, based on the platypus management plan under development.			Not funded. Continuation of previous monitoring by Wimmera CMA.

Resources and budget

The successful implementation of the Strategy and this Implementation Plan is dependent on adequate funding and resourcing being available to Wimmera CMA and its partners. Delivery of management actions will rely on contributions from a range of programs, organisations and funding sources, including government investment, partner contributions and in-kind support from stakeholders, landholders and community groups.

Where funding allocations are known at the time of preparing this Plan, management actions and targets have been developed based on the level of investment currently available or reasonably expected over the life of the Strategy. However, funding arrangements, priorities and delivery opportunities may change over time. As a result, the extent, timing and scale of implementation may vary depending on available resources. Consistent with past practice, Wimmera CMA and its partners will actively seek opportunities to secure additional investment from a range of sources to support the delivery of Strategy outcomes. This may include government initiatives, partnerships, co-investment opportunities, competitive grant programs and other emerging funding sources.

The actions and targets included in this Plan represent the best available understanding of current delivery priorities and resourcing. The Plan is intended to be adaptive and will be reviewed and updated over time to reflect changes in funding, resourcing, knowledge and implementation priorities. As new funding becomes available, additional actions may be incorporated, existing actions expanded, and targets revised to maximise progress towards the Strategy's desired environmental, cultural, social and economic outcomes.

Risk management

Implementation of the Strategy will occur in a dynamic and sometimes unpredictable operating environment. Factors such as climate variability, drought, flood events, funding availability, policy changes, stakeholder capacity and emerging environmental threats can influence the successful delivery of planned actions and achievement of Strategy outcomes.

Effective risk management helps ensure that potential challenges are identified early and managed proactively. It supports informed decision-making, improves the efficient allocation of resources, and enhances the ability of Wimmera CMA and its partners to adapt implementation approaches where circumstances change. Risk management also provides transparency around factors that may affect the extent, timing or effectiveness of Strategy delivery.

The risks represent the key factors that could influence the achievement of intended environmental, cultural, social and economic outcomes over the life of the Strategy. Each risk has been assessed based on its likelihood and potential consequence and appropriate management responses have been identified to reduce, monitor or respond to those risks where possible. Risk management will be an ongoing process throughout implementation of the Strategy. Risks, risk ratings and mitigation measures will be reviewed periodically and updated as new information emerges, implementation priorities evolve or external conditions change. This adaptive approach will help ensure that risk management remains relevant and supports the effective delivery of Strategy outcomes over time. The risks identified in Table 41Table 41 of this Plan represent have been assessed against the matrix in Table 40.

Table 40.Matrix for assessing the risk level and the level of management response is required.

Likelihood - of risk occurring.	**Consequence -** impact on Strategy implementation if risk occurs.				
	Insignificant	**Minor**	**Moderate**	**Major**	**Severe**
Rare	Low	Low	Low	Low	Moderate
Unlikely	Low	Low	Moderate	Moderate	High
Possible	Low	Moderate	Moderate	High	High
Likely	Moderate	Moderate	High	High	Extreme
Almost certain	Moderate	High	High	Extreme	Extreme

Table 41. Key risks and mitigation measure for implementation of the Strategy and Plan.

Risk	Potential impact on implementation	Likelihood	Consequence	Risk rating	Mitigation measures
Climate variability and extreme events.	Reduced rainfall, declining runoff, drought, heatwaves, bushfires, floods and other extreme events may affect waterway condition, environmental watering outcomes and the success of restoration works.	Almost certain	High	**Extreme** Requires management	• Incorporate climate adaptation measures into planning and project design. • Investigate alternative water sources, where appropriate, to reduce pressure on potable water supply. • Align implementation with strategic water resource planning, including the *Western Region Sustainable Water Strategy*. • Use adaptive management to respond to changing conditions including extreme events
Insufficient funding and resource constraints.	Limited funding, staff capacity or resources may delay or prevent implementation of priority actions.	Likely	Moderate	**High** Requires management	• Seek co-investment opportunities with government agencies, local government, First Nations organisations, industry and community partners. • Pursue state, federal and philanthropic funding opportunities. • Support and partner with volunteer and community-based programs where appropriate. • Prioritise actions based on strategic importance, feasibility and expected outcomes.
Stakeholder engagement challenges.	Limited community, landholder or stakeholder support may reduce participation and hinder delivery of on-ground works.	Possible	Moderate	**Moderate** Consider management	• Maintain transparent communication and regular engagement. • Provide clear information about project benefits and impacts. • Support landholder participation through incentives and technical advice. • Continue to strengthen relationships with community groups and partner organisations.
Partnership breakdowns.	Loss of effective partnerships may prevent coordinated delivery, co-investment and shared ownership of actions.	Unlikely	Moderate	**Moderate** Consider management	• Maintain regular communication and collaborative planning processes. • Clearly define roles, responsibilities and shared objectives. • Establish agreed milestones and pathways for delivery. • Monitor partnership effectiveness and address issues early.
Breakdown of relationships with First Nations Peoples.	Reduced collaboration may affect co-design opportunities, cultural outcomes, protection of cultural values and successful project delivery.	Unlikely	Major	**Moderate** Consider management	• Maintain respectful, reciprocal and trust-based relationships with First Nations organisations. • Seek meaningful co-design and shared decision-making opportunities. • Undertake engagement that is responsive to First Nations Peoples' priorities, capacity and governance processes. • Align activities with the *Water is Life Roadmap*, Country Plans and relevant cultural frameworks. • Support cultural awareness and development of capability among staff and delivery partners.

Risk	Potential impact on implementation	Likelihood	Consequence	Risk rating	Mitigation measures
Regulatory and policy changes.	Changes to legislation, policy, funding programs or governance arrangements may affect priorities, approvals and implementation timeframes.	Possible	Moderate	**Moderate** Consider management	• Monitor policy and legislative developments. • Maintain flexibility within implementation planning. • Engage early with relevant agencies to understand and align with emerging requirements.
Actions cause unauthorised or unplanned impacts, such as environmental impacts during on-ground works.	Management actions may result in unforeseen environmental, cultural, social or operational impacts. Construction, restoration or management activities may result in unintended short-term environmental impacts.	Possible	Moderate	**Moderate** Consider management	• Apply best-practice environmental management procedures. • Schedule works to avoid sensitive periods where possible, considering seasonal conditions, weather forecasts and operational constraints. • Monitor works and adapt methods if impacts are identified. • Ensure appropriate approvals and safeguards are in place. • Assess potential impacts during planning and design. • Draw on previous experience, monitoring results and available research.
Non-compliance with laws, agreements and regulations.	Failure to meet legal, regulatory or funding requirements may affect project delivery, funding and stakeholder confidence.	Rare	Major	**Low** Continue existing processes	• Align all actions with relevant legislation, policies and assigned responsibilities. • Undertake regular compliance reviews. • Incorporate reporting and compliance requirements into project planning and MERI processes. • Clearly communicate obligations to delivery partners and stakeholders.
Unclear program logic or outcomes.	Weak links between actions and intended outcomes may reduce the ability to demonstrate progress, effectiveness and value for investment.	Possible	Moderate	**Moderate** Consider management	• Clearly link actions to Strategy outcomes and priority areas. • Document assumptions and risks. • Establish measurable indicators and evaluation methods. • Periodically review and refine program logic as new information becomes available.
Incomplete identification of risks and knowledge gaps.	Unanticipated risks or information gaps may affect project effectiveness and stakeholder and investor confidence.	Unlikely	Moderate	**Moderate** Consider management	• Use consultation, monitoring and research to identify emerging risks and knowledge gaps. • Regularly review and update risk assessments. • Incorporate findings from monitoring, evaluation and stakeholder feedback into adaptive management.
Inability to demonstrate outcomes have been achieved.	Failure to demonstrate progress may affect future investment and stakeholder support.	Possible	Moderate	**Moderate** Consider management	• Establish clear monitoring, evaluation, reporting and improvement (MERI) frameworks. • Define indicators and evidence requirements during project planning. • Regularly communicate achievements, lessons learned and outcomes to stakeholders.

Monitoring and evaluation

Monitoring, Evaluation, Reporting and Improvement (MERI) is a structured approach for tracking progress, assessing effectiveness and guiding continuous improvement in delivering strategic outcomes and actions. It ensures accountability and transparency by monitoring activities, evaluating results, reporting findings and applying lessons learned to improve future planning and implementation.

MERI processes for this Plan and the Strategy are described in the *Monitoring, Evaluation, Reporting and Improvement Plan – Wimmera Waterway Strategy* (the MERI Plan).

Review and update

The Plan will be reviewed and updated regularly to ensure it remains current and responsive to changing conditions:

- Annual light review – to account for changes occurring during the year.
- Every four years – aligned with Environmental Contribution tranche funding cycles.
- When new funding becomes available – to incorporate opportunities from additional funding sources.
- In line with the Strategy's formal reviews – at mid-life (after 5 years) and end-of-life (after 10 years).

The Strategy will be implemented using the best available science and knowledge. Waterway managers will update and adapt the Plan as new information emerges, subject to available funding.

Regular reviews are essential to ensure effective implementation and identify opportunities for improvement. Reviews will focus on adaptive management, ensuring the Plan remains relevant and effective. They will be undertaken in collaboration with Traditional Owners and other partners.

Conclusion

This Plan provides a clear roadmap for delivering priority actions that protect and enhance the region's rivers, streams and wetlands over the next decade. Through collaboration with First Nations organisations, local communities, government agencies and delivery partners, this plan ensures that environmental, cultural, social and economic values of Wimmera waterways are sustained for future generations.

By outlining practical actions and roles and responsibilities, this Plan supports adaptive management in response to changing conditions such as climate variability and resource constraints. Success will depend on strong partnerships, transparent communication and ongoing community engagement.

Together, these efforts will contribute to healthier waterways, resilient ecosystems and strengthened cultural connections across the Wimmera region, delivering on the vision of the Strategy.

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Appendix 1 – Demonstrating the links between outcomes and actions

The Strategy seeks to establish a clear line of sight between the outcomes sought for the region's waterways and the actions required to achieve them. The following section provides the framework that links the Strategy's 10-year outcomes with the priority areas, values, threats and management actions identified for implementation.

Each medium-term outcome is supported by an outcome statement describing what success looks like at the conclusion of the Strategy period. These success statements provide a shared vision for implementation and help clarify the intended environmental, cultural, social and economic changes that management actions are designed to achieve. They also support monitoring, evaluation, reporting and adaptive management by providing a clear basis for assessing progress.

The accompanying tables demonstrate how each 10-year outcome is connected to the region's priority management areas, the key values to be protected or enhanced, the threats that need to be addressed, and the management actions that will contribute to achieving the desired outcome. Together, these relationships describe the pathway from investment and on-ground management to the longer-term changes sought through the Strategy.

By presenting outcomes, values, threats and actions within a single framework, this section helps ensure that implementation efforts are strategically aligned, transparent and focused on activities that will make the greatest contribution to improving the health, resilience and community value of the Wimmera region's waterways and wetlands.

Medium-term outcome 1.

Ongoing collaboration and two-way learning in waterway planning and management, supporting self-determination and strengthening partnerships with First Nations People.

Outcome statement:

Waterway planning and management occur in genuine partnership with First Nations Peoples. Registered Aboriginal Parties in the Wimmera, Barengi Gadjin Land Council and Eastern Maar Aboriginal Corporation, are empowered to embed their knowledge, cultural values, and priorities in decision-making in self-determined ways.

Collaborative partnerships support self-determination through ongoing respectful two-way learning, where cultural knowledge and scientific evidence are equally valued and inform practice.

Agencies demonstrate strong capability in culturally informed engagement and collaborative waterway management.

This approach results in waterway management that reflects and prioritises cultural values alongside environmental, social and economic outcomes; upholds the rights and aspirations of First Nations People; and achieves more sustainable, inclusive and place-based outcomes.

What will success look like?

- First Nations groups self-determine the nature and level of involvement in waterway planning and management partnerships.
- Waterway planning and management occur in collaborative partnership with First Nations People, collectively shaping decisions and priorities.
- Waterway management plans and projects reflect cultural knowledge and values alongside scientific evidence and broader community aspirations.
- Strong, trusted partnerships support ongoing two-way learning and culturally informed practice across agencies.

Priorities	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Supporting self-determination. **Collaborative partnerships.** **Two-way learning and capacity-building**.	**Themes:** • Rivers and streams • Wetlands **Local areas:** • Whole region	**Cultural heritage**, such as culturally modified trees, artefacts, middens, earth ovens, lore and Creation Stories. **Connections to Country.** **Cultural responsibilities and rights to care for Country.** **Waterways are living parts of Country.** All elements of waterways - water, land, plants, animals, and people - are part of an interconnected living system. **Traditional ecological knowledge** – cultural knowledge. **Significant places**, including the Barringgi Gadyin (Wimmera River), Gurru (Lake Hindmarsh), Ngalpakatia/Ngelpagutya (Lake Albacutya) the Ranch and Billabong, the Common, Antwerp property including Datchak Creek and more. **Significant species**, including native fish, platypus, freshwater mussels, freshwater crayfish and more. **Cultural practices** such as burning and caring for rivers, streams and wetlands.	**Insufficient and inconsistent resourcing**, including time, staff and funding. **Competing priorities** that sideline partnership commitments. **Compliance-heavy approaches that can incentivise tokenistic engagement** rather than shared, collaborative partnerships. **Staff turnover**, disrupting relationships, continuity, capacity, and knowledge sharing. **Poor communication or unclear roles**. **Misalignment between scientific and cultural approaches**, or broader community priorities. **External shocks and changing operating environments** that divert attention and resources from partnership objectives.	**Regular partnership meetings** to discuss waterway plans, strategies, projects and initiatives. **Collaborate on and provide support for activities that advance self-determination.** For example, Barengi Gadjin Land Council's interest in strategic management of property along the Datchak Creek at Antwerp, as well as other culturally significant sites. **Collaborate to plan and implement waterway-related actions on Country** including, for example: • Disaster preparedness, response and recovery. • Riverbank and tree management. • Cultural burning. • Supporting waterway plants and animals. **Support employment and training** opportunities for First Nations People. **Support cultural awareness training opportunities** to facilitate partnerships and interactions that are culturally informed. **Support BGLC and EMAC as the lead organisations for advice on cultural heritage** and other cultural considerations.	Wimmera CMA Barengi Gadjin Land Council (BGLC) Eastern Maar Aboriginal Corporation (EMAC) Other stakeholder organisations	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination.	Water is Life: Traditional Owner Access to Water Roadmap. Nation Statements in Water is Life: Traditional Owner Access to Water Roadmap – Section B (2022): • Barengi Gadjin Land Council • Eastern Maar Aboriginal Corporation. Victorian Waterway Management Strategy. Growing What is Good (Dya) Country Plan (2026). 'Meerreengeeye Ngakeepoorryeeyt' Eastern Maar Country Plan. Barengi Gadjin Land Council's Engagement Protocols and Principles.

Medium-term outcome 2.
Priority areas have improved management to enhance habitat, landscape connectivity, and resilience.

Outcome statement:

Targeted waterway management in identified priority areas will result in:

- Measurably healthier riparian and aquatic habitats.
- More extensive and better-connected aquatic and riparian habitat along waterways.

This will lead to greater resilience by increasing the ability of waterways to support waterway values and recover from climate variability, extreme events including drought, fire and floods, and long-term climate change.

As a result, waterways will support healthier ecosystems and deliver enduring environmental, cultural, social and economic values.

What will success look like?

- Measurably healthier riparian and aquatic habitats with the capacity to recover from disasters.
- More extensive and better-connected riparian and aquatic habitat.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Lower Wimmera River - Wimmera Heritage River from Polkemmet to the terminal lakes system, including Lake Hindmarsh, Outlet Creek, and Lake Albacutya. This area is the **Lower Wimmera Flagship waterway**.	**Themes:** • Rivers and streams • Wetlands **Local areas:** • Hindmarsh	**Victorian Heritage River** under the *Heritage Rivers Act 1992* (Vic) due to its significant nature conservation, recreation, scenic and cultural heritage attributes. **Lake Albacutya Ramsar site**, a wetland of international importance. **Wetlands listed on the National Directory of Important Wetlands in Australia**, including Lake Albacutya, Lake Hindmarsh and the Wimmera River from Polkemmet to the	**Reduced river flows and lake inundation** due to: • **Water regulation and extraction.** • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Saline groundwater intrusion** impacting	**Water for the environment.** **Revegetating riparian and floodplain land** to: • Improve native vegetation extent and quality. • Reduce saline groundwater intrusion where groundwater is close to the surface. **Control pest plants and animals** and monitor to inform control effort**.** **Erosion control,** bed and bank stabilisation works.	Wimmera CMA Barengi Gadjin Land Council Victorian Environmental Water Holder Commonwealth Environmental Water Holder Private landholders Parks Victoria	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO2 - Values and condition of waterways with formally recognised significance are maintained or improved.	Flagship waterway planning documents. Wimmera Invasive Plant and Animal Management Strategy (2019). Wimmera Proportion of Waterways Protected (2024). Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		Wirrengren Plain-Lake Agnes in the Mallee CMA region. **High cultural significance** for Wotjobaluk Nations Peoples. **Highly connected and high-quality native vegetation corridor** in an agricultural landscape, providing the most significant continuous tract of native vegetation in the northern half of the Wimmera, linking the Little Desert and Wyperfeld National Parks. Important for enabling species movement under climate change scenarios. **Threatened species and vegetation communities,** including nationally threatened Australasian bittern, floodplain rustyhood and riparian vegetation communities. **Lakes support tens of thousands of waterbirds** when flooded, including threatened, migratory and breeding species. **Native fish** including freshwater catfish, golden perch, silver perch and other native aquatic species. **High social, recreational and amenity values**,	water quality and habitat. **Invasive plants**, particularly bridal creeper, boneseed and gorse. **Over-grazing of native vegetation** by rabbits and native herbivores. **Foxes** preying on native animals. **Carp** increasing instream turbidity and impacting aquatic plants and native fish. **Floods** spreading weeds. **Bushfire** impacting water quality and riparian vegetation and fauna. **Bank erosion** threatening environmental, cultural and recreational values and activities. **Impacts of recreation and access**, such as off-road vehicles, littering, and illegal firewood removal. **Decline of key water regulation infrastructure**,	**Stock exclusion fencing** and grazing management. **Support Barengi Gadjin Land Council's self-determination**, including support for strategic management of property along the Datchak Creek at Antwerp, and other culturally significant sites. **Protect environmental values and cultural heritage** from the impacts of recreation, while supporting **sustainable access.** **Maintain key flow infrastructure.** **Integrated Water Management,** investigating increased reuse of treated water to reduce releases into the river and consumption pressure. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Regional DEECA (public lands staff) Landcare groups Hindmarsh Shire Council Community recreation groups including anglers	LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO4 - Water is of sufficient quality to support waterway values and uses at important areas for water supply, cultural, environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	terminal lakes (2024). Lake Albacutya Ramsar site Ecological Character Description. Lake Albacutya Ramsar Site Annual Action Plan. Wimmera Carp Management Plan.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		including town weir pools, camping areas, bike and walking trail, and recreational fishing.	particularly Jeparit weir pool, impacting on safe management of flows including water for the environment.				
Lake Albacutya.	**Themes:** • Wetlands **Local areas:** • Hindmarsh	**Wetland of International Importance** under the Ramsar Convention on Wetlands. **Nationally important wetland** on the Directory of Important Wetlands in Australia. Part of the **Wimmera Heritage River** under the *Heritage Rivers Act 1992* (Vic). **Supports tens of thousands of waterbirds** when flooded, including threatened, migratory and breeding species. **Highly connected and high-quality native vegetation**, contributing to links between Lake Hindmarsh, Outlet Creek, the Wimmera River and Wyperfeld National Park. Important for enabling species movement under climate change scenarios. **Unique and threatened species and vegetation communities,** including a salt-tolerant river red gum	**Reduced frequency and extent of inundation** due to: • **Water regulation and extraction.** • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Invasive plants** particularly bridal creeper. **Over-grazing of native vegetation** by rabbits and native herbivores. **Foxes** preying on native animals. **Impacts of recreational access**, particularly off-road vehicles leading to erosion and loss of habitat.	**Control pest plants and animals** and monitor to inform control effort**.** **Protect environmental values and cultural heritage from the impacts of recreation, while supporting safe and sustainable access.** **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Wimmera CMA Parks Victoria Barengi Gadjin Land Council Hindmarsh Shire Council Victorian Environmental Water Holder Commonwealth Environmental Water Holder Landcare and community groups Community recreation groups including Friends-of Lake Albacutya	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO2 - Values and condition of waterways with formally recognised significance are maintained or improved. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and	Wimmera Regional Land Partnerships Program Action Plan. Lake Albacutya Ramsar site Ecological Character Description. Lake Albacutya Ramsar Site Strategic Management Plan. Wimmera Invasive Plant and Animal Management Strategy (2019). Investigating Priorities for Wetland Connectivity in the Wimmera CMA region.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		variant, nationally threatened regent parrot and pink cockatoo, and sensitive pine-buloke woodlands. **High cultural significance** for Wotjobaluk Nations Peoples. **High social and recreational** value, both as a wet and dry lake, but especially when holding water.	**Bushfire** impacting on native plants and animals.			economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	
Lake Hindmarsh.	**Themes:** • Wetlands **Local areas:** • Hindmarsh	**Wetland of International Importance** under the Ramsar Convention on Wetlands. **Nationally important wetland** on the Directory of Important Wetlands in Australia. Part of the **Wimmera Heritage River** under the *Heritage Rivers Act 1992* (Vic). **Supports thousands of waterbirds** when flooded, including threatened, migratory and breeding species. **Highly connected and high-quality native vegetation** contributing to links between Lake Hindmarsh, Outlet Creek, the Wimmera River and Wyperfeld National Park.	**Reduced river flows and lake inundation** due to: • **Water regulation and extraction.** • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Reduced water availability due to water regulation and extraction, climate change, and reduced rainfall and runoff**, leading to reduced frequency and extent of inundation and a decline in fringing	**Control pest plants and animals** and monitor to inform control effort**.** **Protect environmental values and cultural heritage from the impacts of recreation, while supporting safe and sustainable access.** **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Wimmera CMA Parks Victoria Barengi Gadjin Land Council Hindmarsh Shire Council Landcare and community groups Community recreation groups	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO2 - Values and condition of waterways with formally recognised significance are maintained or improved. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and	Directory of Important Wetlands in Australia – site descriptions. Lake Hindmarsh bird surveys (various). Wimmera Invasive Plant and Animal Management Strategy (2019).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		Important for enabling species movement under climate change scenarios. **Threatened and migratory species and threatened vegetation communities,** including great egret, Australasian shoveler, musk duck, gull-billed tern, salt paperbark vegetation communities, and migratory shorebirds, red-necked stint and sharp-tailed sandpiper, that are listed on international migratory bird agreements with Japan, China and Republic of Korea. **High cultural significance** for Wotjobaluk Nations Peoples. **High social and recreational** value, both as a wet and dry lake, but especially when holding water.	eucalypt woodland health. **Invasive plants** particularly bridal creeper, boneseed and boxthorn. **Over-grazing of native vegetation** by rabbits and native herbivores. **Foxes** preying on native animals. **Bushfire** impacting on native plants and animals. **Impacts of recreational access**, particularly off-road vehicles leading to erosion and loss of habitat.			native communities. LO4 - Water is of sufficient quality to support waterway values and uses at important areas for water supply, cultural, environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	
Mid Wimmera River and tributaries	**Themes:** • Rivers and streams **Local areas:** • Horsham	**High cultural significance** for Wotjobaluk Nations Peoples. **Relatively high proportion of connected and protected native vegetation** in generally moderate condition, with sections in good condition.	**Reduced river flows** due to: • **Water regulation and extraction.** • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain	**Water for the environment.** **Revegetating riparian land** to improve habitat and connectivity. **Control pest plants and animals** and monitor to inform control effort**.**	Wimmera CMA GWMWater Victorian Environmental Water Holder Commonwealth Environmental Water Holder Parks Victoria	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination.	Wimmera Proportion of Waterways Protected. Final Report (2023). Wimmera Proportion of Waterways Protected – Stage 2. Final Report (2024).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		Highly connected native vegetation corridor linking the Grampians and Little Desert National Parks through an agricultural landscape. Important for enabling movement to refuge areas under climate change scenarios. **Threatened species and native vegetation communities,** including nationally threatened Australian shoveler, freshwater catfish and riparian vegetation communities. **High social and recreational value**, particularly around Horsham weir pool and recreational fishing areas. Popular for walking, running, cycling picnicking, camping and major community events. **Economic values** include tourism, major events and water supply. **High amenity value** for Horsham township and surrounds.	moisture in paddocks, reducing runoff. **Invasive plants**, particularly bridal creeper, capeweed and other weeds. **Over-grazing of native vegetation** by rabbits and native herbivores. **Foxes** preying on native animals. **Carp** increasing instream turbidity and impacting aquatic plants and native fish. **Floods** spreading weeds. **Bushfire**, impacting water quality and riparian vegetation and fauna. **Impacts of recreation and access**, such as off-road vehicles, littering, and illegal firewood removal. **Trees and limbs falling in the river, and aquatic vegetation**, impacting on safe access and cultural values in priority recreational	**Stock exclusion fencing** and grazing management. **Monitor vegetation condition and wildlife** to assess progress towards achieving objectives and inform future management. **Infrastructure improvements and other works** to improve efficient environmental water delivery and flow movement that maximises benefits. **Integrated Water Management,** investigating increased reuse of treated water to reduce releases into the river and consumption pressure. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Regional DEECA (public lands staff) Barengi Gadjin Land Council Horsham Rural City Council Horsham District Landcare Network Landcare and community groups Community recreation groups Private landholders	LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024). Wimmera Invasive Plant and Animal Management Strategy (2019). Wimmera Carp Management Plan.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
			areas such as weir pools.				
MacKenzie River, Burnt Creek and Bungalally Creek	**Theme:** • Rivers and streams **Local areas:** • Horsham	**High environmental values.** **Supports remnant Wimmera populations** of platypus and river blackfish. **Threatened species**, including platypus, western swamp crayfish, Glenelg spiny crayfish, southern pygmy perch, obscure galaxias and freshwater mussels. **Threatened plants**, including nationally threatened Wimmera callistemon, spiny lignum. **High proportion of connected, protected high quality and diverse native vegetation** along the MacKenzie River. Some areas of good condition along Burnt and Bungalally Creeks. **Key native fish breeding location** for southern pygmy perch, river blackfish and obscure galaxias. **Provides a largely connected habitat corridor** through a largely agricultural landscape, connecting the Grampians National Park	**Changes to hydrology** due to: • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. • **Changes to landscape drainage patterns** arising from surrounding land use such as roads and agriculture. **Invasive plants**, particularly bridal creeper, capeweed, gorse, broom and boneseed. **Over-grazing of native vegetation** by rabbits and native herbivores. **Foxes** preying on native animals. **Carp** increasing instream turbidity and	**Water for the environment.** **Revegetating riparian land** to improve habitat and connectivity. **Control pest plants and animals** and monitor to inform control effort**.** **Stock exclusion fencing** and grazing management. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge. **Monitor vegetation condition and wildlife** to assess progress towards achieving objectives and inform future management. **Infrastructure improvements and other works** to improve efficient environmental water delivery and flow movement that maximises benefits.	Wimmera CMA Barengi Gadjin Land Council GWMWater Victorian Environmental Water Holder Parks Victoria Regional DEECA (public lands staff) Horsham District Landcare Network Landcare groups Private landholders	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Burnt Creek and MacKenzie River flow optimisation report (2019). Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks (2025). Wimmera Native Fish Management Plan (2022). MacKenzie River Waterway Action Plan (2004). Wimmera Invasive Plant and Animal Management Strategy (2019). Waterway Action Plans for the MacKenzie River (2004) and Burnt Creek (2005). Wimmera Proportion of Waterways Protected – Stage

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		with the Wimmera River and Little Desert National Park. Important for enabling species movement under climate change scenarios. **Drought refuges** providing habitat during dry periods and drought. **High cultural significance** for Wotjobaluk Nations Peoples. **High social and economic values**, particularly key tourist areas in the Grampians National Park and surrounds. **High community values and stewardship**, including active Landcare network and groups.	impacting aquatic plants and native fish. **Bushfire**, impacting water quality and riparian vegetation and fauna. **Impacts of recreation and access**, such as off-road vehicles impacting vegetation and erosion.				2. Final Report (2024). Wimmera Carp Management Plan.
Upper Wimmera River and tributaries upstream of Glenorchy	**Theme:** • Rivers and streams **Local areas:** • Upper catchment	**High environmental values**, including small-bodied native fish such as southern pygmy perch, obscure galaxias, mountain galaxias, frogs, native vegetation. **Threatened species**, including western swamp crayfish and southern pygmy perch. **High quality and threatened native vegetation communities** in sections.	**Reduced river flows** due to: • **Water extraction**, with water harvested into farm dams. • **Climate change and drought** contributing to reduced rainfall and runoff and declining groundwater levels, potentially reducing the persistence of refuge pools. • **Agricultural land management practices** that retain	**Water for the environment** – Mount Cole Creek drought refuge sites. **Erosion control,** bed and bank stabilisation works. **Revegetating riparian land** to improve habitat, connectivity and stability of soils. **Control pest plants and animals** and monitor to inform control effort**.**	Wimmera CMA Eastern Maar Aboriginal Corporation Parks Victoria Regional DEECA (public lands staff) Victorian Environmental Water Holder Trust for Nature	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports	Wimmera Proportion of Waterways Protected (2024) Wimmera Geomorphic Categorisation and Stream Condition Report (2003) Trust for Nature's Statewide Conservation Plan (2021) Wimmera Native Fish Management Plan (2022).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		Cultural heritage values. **Drought refuge pools** provide habitat during dry periods and drought. **Unique geomorphology**, including chains of ponds in some waterways. **Contributes to landscape connectivity**, for the Grampians to Pyrenees Biolink vision. Important for enabling species movement under climate change scenarios. **Town water and irrigation supply.** **Landscape amenity.** **Recreational values.** **Strong community connection to waterways**, demonstrated by high level of stewardship and Landcare participation.	moisture in paddocks, reducing runoff. **Grazing by stock.** **Poor ground cover enabling erosion**, contributing to sediment moving downstream, impacting on water quality and instream habitat. **Rabbits** over-grazing native vegetation and contributing to erosion. **Invasive plants**, particularly bridal creeper, blackberry and gorse. **Foxes** preying on native animals. **Bushfire**, impacting water quality and riparian vegetation and fauna.	**Stock exclusion fencing** and grazing management. **Monitor vegetation condition and wildlife** to assess progress towards achieving objectives and inform future management. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge. **Community education and knowledge building**, particularly regarding land management practices that stabilise soils and reduce erosion.	Project Platypus Landcare Network Landcare groups Private landholders	native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Wimmera CMA's native fish surveys (various). Waterway Action Plans (various). Wimmera Invasive Plant and Animal Management Strategy (2019).
Mount William Creek and tributaries	**Theme:** • Rivers and streams **Local areas:** • Upper catchment	**High environmental values**, including small-bodied native fish such as southern pygmy perch, obscure galaxias, mountain galaxias, frogs, native vegetation. **Threatened species**, including western swamp crayfish and southern pygmy perch.	**Reduced river flows** due to: • **Water extraction**, with water harvested into water supply storages and farm dams. • **Climate change and drought** contributing to reduced rainfall and runoff and declining	**Water for the environment** – Mount William Creek. **Erosion control,** bed and bank stabilisation works. **Revegetating riparian land** to improve habitat, connectivity and stability of soils.	Wimmera CMA Eastern Maar Aboriginal Corporation Parks Victoria Regional DEECA (public lands staff)	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination.	Wimmera Proportion of Waterways Protected (2024). Various Waterway Action Plans. Wimmera Geomorphic Categorisation and Stream Condition Report (2003).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		High quality and threatened native vegetation communities in sections. **Cultural heritage values.** **Drought refuge pools** provide habitat during dry periods and drought. **Contributes to landscape connectivity**, for the Grampians to Pyrenees Biolink vision. Important for enabling species movement under climate change scenarios. **Town water and stock and domestic supply.** **Landscape amenity.** **Recreation and tourism**, including Grampians National Park tourist locations and Lake Lonsdale, bushwalking, camping, fishing, boating and yabbying. **Strong community connection to waterways**, demonstrated by high level of stewardship and Landcare participation.	groundwater levels, potentially reducing the persistence of refuge pools. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Grazing by stock.** **Erosion**, contributing to sediment moving downstream, impacting on water quality and instream habitat. **Rabbits** over-grazing native vegetation and contributing to erosion. **Invasive plants**, particularly bridal creeper. **Foxes** preying on native animals. **Bushfire**, impacting water quality and riparian vegetation and fauna.	**Control pest plants and animals** and monitor to inform control effort**.** **Stock exclusion fencing** and grazing management. **Monitor vegetation condition and wildlife** to assess progress towards achieving objectives and inform future management. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge. **Community education and knowledge building**, particularly regarding land management practices that stabilise soils and reduce erosion, and management of the Lake Lonsdale and Mount William Creek system.	Victorian Environmental Water Holder Commonwealth Environmental Water Holder Trust for Nature Project Platypus Landcare Network Landcare groups Private landholders	LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Trust for Nature's Statewide Conservation Plan (2021). Wimmera Invasive Plant and Animal Management Strategy (2019). Wimmera Native Fish Management Plan (2022). Wimmera CMA's native fish surveys (various).
Wetlands with high environmental value in waterway asset groups:	**Themes:** • Wetlands **Local areas:** • Horsham	**High concentration and diversity** of wetland types and associated plants and animals, forming a major wetland complex.	**Changes to hydrology** arising from: • **Drainage alterations** that artificially drain or flood wetlands.	**Wetland protection on private land,** including permanent conservation covenants and management agreements.	Wimmera CMA Trust for Nature Greening Australia Parks Victoria	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the	Wetland modification analysis completed by Wimmera CMA in 2017 (unpublished).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
• **South-west Wimmera wetlands.** • **Horsham wetlands including the Natimuk-Douglas chain of lakes.** • **Upper catchment wetlands.**	• Upper catchment • West Wimmera	**Support high biodiversity**, particularly wetland plants, frogs, birds and invertebrates. **Support threatened plants and animals,** including nationally threatened growling grass frogs, and provide breeding habitat for threatened brolgas. Frequently co-located with **endangered buloke vegetation communities**. **High density and chains of wetlands enable species movement and connectivity**, increasingly important under climate change scenarios. **High cultural significance** for Wotjobaluk Nations Peoples. **Community values and stewardship**, including visual amenity, connection to nature and active community groups. **Recreational opportunities** including walking, fishing, yabbying, camping, bird watching, water sports and duck hunting. **Economic values**, including water supply, tourism and community events centred around wetlands.	• **Climate change**, leading to reduced rainfall and runoff, reduced frequency and extent of inundation, and increased ability to crop wetland basins. • **Dam construction** inside wetland basins. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Cropping** of the wetland basin and riparian zone. **Clearing of native vegetation**, in the wetland basin and riparian zone. **Introduction of nutrients** from cropping practices in or beside the wetland. **Invasive plants**, particularly bridal creeper and weeds invading from agricultural land such as phalaris species. **Over-grazing,** primarily by sheep,	**Revegetating riparian land** to: • Improve native vegetation extent, quality and connectedness. • Provide buffer zones between wetlands and neighbouring agricultural land. **Control pest plants and animals** and monitor to inform control effort**.** **Stock exclusion fencing** and grazing management. **Education** to **i**ncrease community and landholder awareness of the location and value of wetlands and appropriate conservation management techniques. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Regional DEECA (public lands staff) Private landholders Landcare and community groups Committees of Management	Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Wimmera wetland asset strategy. Index of wetland condition assessments. Investigating Priorities for Wetland Connectivity in the Wimmera CMA region. Social and Economic Drivers of Wetland Rehabilitation. Wimmera Invasive Plant and Animal Management Strategy. Trust for Nature's Statewide Conservation Plan 2021-2030. Wimmera Invasive Plant and Animal Management Strategy (2019).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
			rabbits, and native herbivores. **Foxes** impacting on native wildlife, especially nesting brolgas**.** **Increased fragmentation** and reduced connectivity between wetland habitat.				
Nationally important wetlands listed on the Directory of Important Wetlands in Australia, including: 1. **Natimuk Lake, Natimuk Creek and Lake Wyn Wyn.** 2. **White Lake.** 3. **Oliver's Swamp (Lake).** 4. **Grass Flat (Telfer's) Swamp.** 5. **Saint Mary's Lake.** 6. **Heard's Lake.** 7. **Friedman's Salt Lake.** 8. **Bitter Swamp.** 9. **Mitre Lake.** 10. **Hately's Lake.**	**Themes:** • Wetlands **Local areas:** • Hindmarsh • Horsham • West Wimmera	**Nationally important wetlands** on the Directory of Important Wetlands in Australia. **Significant numbers and diversity of waterbirds**. **Migratory waterbirds** listed under the Japan-Australia, China-Australia and Republic of Korea-Australia Migratory Bird Agreements, including sharp-tailed sandpiper and red-necked stint. **Threatened animals and birds** including Altona skipper butterfly, blue-billed duck, musk duck, great egret, freckled duck. **Threatened vegetation communities** including salt paperbark, samphire and buloke communities.	**Reduced wetland inundation** due to: • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Over-grazing of native vegetation** by rabbits and native herbivores. **Invasive plants**, particularly bridal creeper **Foxes** preying on native animals. **Surrounding land use,** with many	**Wetland protection on private land,** including permanent conservation covenants and management agreements. **Revegetating riparian land** to: • Improve native vegetation extent, quality and connectedness. • Provide buffer zones between wetlands and neighbouring agricultural land. **Control pest plants and animals** and monitor to inform control effort**.** **Education** to **i**ncrease community and landholder awareness of the location and value of wetlands and appropriate conservation management techniques.	Wimmera CMA Parks Victoria Regional DEECA (public lands staff) Trust for Nature Private landholders Landcare and community groups	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO2 - Values and condition of waterways with formally recognised significance are maintained or improved. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and	Index of wetland condition assessments. Directory of Important Wetlands in Australia – site descriptions. Wimmera Wetland Asset Strategy. Investigating Priorities for Wetland Connectivity in the Wimmera CMA region. Wimmera Invasive Plant and Animal Management Strategy. Wimmera Wetland Asset Strategy. Wimmera Wetland Hydrology Investigation.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Other nationally important wetlands have been described separately: 13. Lake Hindmarsh. 14. Lake Albacutya. Wimmera River from Polkemmet to the Wirrengren Plain-Lake Agnes.		**Threatened plants**, including, bottle bluebush, six-point arrow-grass, bead glasswort, and fused glasswort. **Important bird-watching area**. Pink Lake **attracts high visitation** due to picturesque pink water and its location beside the Western Highway. Freshwater lakes, Saint Mary's Lake and Natimuk Lake, are **valued recreational areas** for activities like water-skiing and swimming when holding water.	wetlands having small riparian buffer zones. **Bushfire** impacting on native plants and animals.	**Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.		native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Wimmera Invasive Plant and Animal Management Strategy (2019).
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains.	**Themes:** • Wetlands **Local areas:** • Horsham • Upper catchment • West Wimmera	**Critically endangered** under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). **Support high biodiversity**, particularly wetland plants, frogs, birds and invertebrates. **Support threatened plants and animals,** including nationally threatened growling grass frogs, and provide breeding habitat for threatened brolgas.	**Changes to hydrology** arising from: • **Drainage alterations** that artificially drain or flood wetlands. • **Climate change**, leading to reduced rainfall and runoff, reduced frequency and extent of inundation, and increased ability to crop wetland basins.	**Wetland protection on private land,** including permanent conservation covenants and management agreements. **Revegetating riparian land** to: • Improve native vegetation extent, quality and connectedness. • Provide buffer zones between wetlands and neighbouring agricultural land.	Wimmera CMA Trust for Nature Private landholders Landcare and community groups	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO2 - Values and condition of waterways with formally recognised significance are maintained or improved.	Approved conservation advice and listing advice for the Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains. Wetland modification analysis completed by Wimmera CMA in 2017 (unpublished).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		Frequently co-located with **endangered buloke vegetation communities**. **Community values and stewardship**, including active community group.	• **Dam construction** inside wetland basins. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Cropping** of the wetland basin and riparian zone. **Clearing of native vegetation**, in the wetland basin and riparian zone. **Introduction of nutrients** from cropping practices in or beside the wetland. **Invasive plants**, particularly bridal creeper and weeds invading from agricultural land such as phalaris species. **Over-grazing,** primarily by sheep, rabbits, and native herbivores. **Foxes** impacting on native wildlife, especially nesting brolgas**.** **Increased fragmentation** and	**Control pest plants and animals** and monitor to inform control effort**.** **Stock exclusion fencing** and grazing management. **Education** to **i**ncrease community and landholder awareness of the location and value of wetlands and appropriate conservation management techniques. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.		LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Wimmera wetland asset strategy. Index of wetland condition assessments. Wimmera Invasive Plant and Animal Management Strategy (2019). Investigating Priorities for Wetland Connectivity in the Wimmera CMA region.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
			reduced connectivity between wetland habitat. **Bushfire** impacting on native plants and animals.				
Wimmera Mallee Pipeline-watered wetlands: **1. Wal Wal Swamp.** **2. Mutton Swamp.** **3. Sawpit Swamp.** **4. Crow Swamp.** **5. Carapugna.** **6. Krong Swamp.** **7. Tarkedia Dam.** **8. Harcoans.** **9. Fieldings Dam.** **10. Challambra Swamp.** **11. Opies Dam.** **12. Pinedale.** **13. Schultz Koschizke.**	**Theme:** • Wetlands **Local areas:** • Hindmarsh • Upper catchment • Yarriambiack and Buloke	**Support diverse native plants and animals**. **Support threatened species.** **Provide wetland habitat and drought refuges** in a largely dry agricultural landscape. **Most are in relatively good condition**. **Cultural significance** for Wotjobaluk Nations Peoples. **High social value** – strong community support for retaining waterway habitat in a dry landscape to support native species following replacement of an open channel and dam water supply system with the Wimmera Mallee Pipeline network.	**Reduced flows** due to: • **Water regulation and extraction.** • **Changes to stock and domestic water delivery** following installation of the Wimmera Mallee Pipeline**.** • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. • **Changes to landscape drainage patterns** arising from surrounding land use such as roads and agriculture. **Invasive plants**, particularly agricultural weeds and grass species including Wimmera ryegrass.	**Water for the environment.** **Infrastructure improvements** to maximise outcomes from water for the environment. **Control pest plants and animals** and monitor to inform control effort**.** **Support Barengi Gadjin Land Council's self-determination**, including support for traditional methods of vegetation management such as cultural burning to enhance wetland habitat. **Monitor vegetation condition and wildlife** to assess progress towards achieving objectives and inform future management. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration,	Wimmera CMA Barengi Gadjin Land Council GWMWater Victorian Environmental Water Holder Parks Victoria Regional DEECA (public lands staff) Private landholders	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Environmental Watering Management Plan for Wimmera Mallee Pipeline Wetlands (2016). Wimmera Invasive Plant and Animal Management Strategy (2019).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
			Over-grazing of native vegetation by rabbits and native herbivores. **Foxes** preying on native animals. **Changes to hydrology** such as channels and dams in the wetland basin and surrounds. **Lack of connectivity**, being surrounded by agricultural land. **Water quality of runoff,** due to surrounding agricultural land uses. **Illegal firewood removal.**	participation and knowledge.			
Yarriambiack and Dunmunkle Creek **(medium priority)**	**Themes:** • Rivers and streams **Local areas:** • Yarriambiack and Buloke	**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	**Reduced river flows** due to: • **Water regulation and extraction**. • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Rabbits and other herbivores** over-	**Revegetating riparian land** to improve habitat, connectivity and stability of soils. **Control pest plants and animals** and monitor to inform control effort**.** **Stock exclusion fencing** and grazing management. **Erosion control,** bed and bank stabilisation works. **Monitor vegetation condition and wildlife** to assess progress towards	Wimmera CMA GWMWater Barengi Gadjin Land Council Victorian Environmental Water Holder Parks Victoria Regional DEECA (public lands staff) Yarrilinks Landcare Network	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat	Yarriambiack Creek Watering (Wimmera CMA internal analysis). Yarriambiack Creek Waterway Action Plan (2018). Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		providing a north-south corridor through an agricultural landscape. Links Darlot Swamp, Barrabool Flora and Fauna Reserve and Lakes Coorong and Lascelles during flood. Important for enabling species movement under climate change scenarios. **High community values and stewardship**, including active Landcare network and groups.	grazing native vegetation and contributing to erosion. **Invasive plants**, particularly bridal creeper, horehound, African boxthorn and others. **Foxes** preying on native animals. **Surrounding land use**, flowing through a broadacre cropping landscape with many areas having narrow riparian buffer zones. **Grazing by stock** (low density and occurrence). **Bushfire**, impacting water quality and riparian vegetation and fauna.	achieving objectives and inform future management. **Restore natural flow movement by decommissioning channel banks** where possible in Dunmunkle Creek, including reconnecting floodplains. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Landcare groups Private landholders	that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	terminal lakes (2024). Wimmera Proportion of Waterways Protected – Stage 2. Final Report (2024). Wimmera Invasive Plant and Animal Management Strategy (2019).

Medium-term outcome 3.

Wetland modification, loss and deterioration of condition occurs at a declining rate.

Outcome statement:

This outcome aims to achieve a measurable decline in the rate of wetland modification, loss, and deterioration in condition across the region. Over time, fewer new wetlands are impacted annually by modifying activities such as drainage, dam construction, cropping, and new land development.

Informed by monitoring that shows a high risk of degradation of wetlands, particularly on private land, this outcome prioritises stronger protection and improved land management practices to address key pressures, including broadacre cropping, stock grazing, adjacent land use, drying conditions, and weed invasion. (1)

As these pressures are better managed, the condition of wetland beds, riparian zones, native vegetation, and water quality is stabilised and progressively improved.

Overall, wetlands and their associated biodiversity are more effectively conserved, with fewer wetlands lost or significantly altered, and a growing proportion maintained or improved in ecological condition over time.

What will success look like?

- A slowing or stabilising number of wetlands impacted annually by modifications including drainage changes, dam construction, cropping, and new land development.
- More wetlands are under proactive, sustained stewardship by landholders.
- More wetlands show stable or improving condition, with healthier native vegetation, reduced weed impacts, and protected riparian zones.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains.	**Themes:** • Wetlands **Local areas:** • Horsham • Upper catchment • West Wimmera	**Critically endangered** under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). **Support high biodiversity**, particularly wetland plants, frogs, birds and invertebrates. **Support threatened plants and animals,** including nationally threatened growling grass frogs, and provide breeding	**Changes to hydrology** arising from: • **Drainage alterations** that artificially drain or flood wetlands. • **Climate change**, leading to reduced rainfall and runoff, reduced frequency and extent of inundation, and increased ability to crop wetland basins. • **Dam construction** inside wetland basins. • **Agricultural land management practices** that retain	**Wetland protection on private land,** including permanent conservation covenants and management agreements. **Revegetating riparian land** to: • Improve native vegetation extent, quality and connectedness. • Provide buffer zones between wetlands and neighbouring agricultural land.	Wimmera CMA Trust for Nature Private landholders Landcare and community groups	LO2 - Values and condition of waterways with formally recognised significance are maintained or improved. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and	Approved conservation advice and listing advice for the Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains. Wetland modification analysis completed by Wimmera CMA in 2017 (unpublished). Wimmera wetland asset strategy. Index of wetland condition assessments.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		habitat for threatened brolgas. Frequently co-located with **endangered buloke vegetation communities**. **Community values and stewardship**, including active community group. **High cultural significance** for First Nations Peoples.	moisture in paddocks, reducing runoff. **Cropping** of the wetland basin and riparian zone. **Clearing of native vegetation**, in the wetland basin and riparian zone. **Introduction of nutrients** from cropping practices in or beside the wetland. **Invasive plants**, particularly bridal creeper and weeds invading from agricultural land such as phalaris species. **Over-grazing,** primarily by sheep, rabbits, and native herbivores. **Foxes** impacting on native wildlife, especially nesting brolgas**.** **Increased fragmentation** and reduced connectivity between wetland habitat.	**Control pest plants and animals** and monitor to inform control effort**.** **Stock exclusion fencing** and grazing management. **Education** to **i**ncrease community and landholder awareness of the location and value of wetlands and appropriate conservation management techniques. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.		economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Wimmera Invasive Plant and Animal Management Strategy (2019).
Wetlands with high environmental value in waterway asset groups:	**Themes:** • Wetlands **Local areas:** • Horsham • Upper catchment	**High concentration and diversity** of wetland types and associated plants and animals, forming a major wetland complex.	**Changes to hydrology** arising from: • **Drainage alterations** that artificially drain or flood wetlands. • **Climate change**, leading to reduced rainfall and runoff,	**Wetland protection on private land,** including permanent conservation covenants and management agreements. **Revegetating riparian land** to:	Wimmera CMA Trust for Nature Private landholders	LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities.	Wetland modification analysis completed by Wimmera CMA in 2017 (unpublished). Wimmera wetland asset strategy.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
• **South-west Wimmera wetlands** • **Horsham wetlands including the Natimuk–Douglas Chain of Lakes** • **Upper catchment wetlands**	• West Wimmera	**Support high biodiversity**, particularly wetland plants, frogs, birds and invertebrates. **Support threatened plants and animals,** including nationally threatened growling grass frogs, and provide breeding habitat for threatened brolgas. Includes 11 wetlands listed on the **National Directory of Important Wetlands**. Frequently co-located with **endangered buloke vegetation communities**. **High density and chains of wetlands enable species movement and connectivity**, increasingly important under climate change scenarios. **High cultural significance** for Wotjobaluk Nations Peoples. **Community values and stewardship**, including visual amenity, connection to	reduced frequency and extent of inundation, and increased ability to crop wetland basins. • **Dam construction** inside wetland basins. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Cropping** of the wetland basin and riparian zone. **Clearing of native vegetation**, in the wetland basin and riparian zone. **Introduction of nutrients** from cropping practices in or beside the wetland. **Invasive plants**, particularly bridal creeper and weeds invading from agricultural land such as phalaris species. **Over-grazing,** primarily by sheep, rabbits, and native herbivores. **Foxes** impacting on native wildlife, especially nesting brolgas**.** **Increased fragmentation** and	• Improve native vegetation extent, quality and connectedness. • Provide buffer zones between wetlands and neighbouring agricultural land. **Control pest plants and animals** and monitor to inform control effort**.** **Stock exclusion fencing** and grazing management. **Education** to **i**ncrease community and landholder awareness of the location and value of wetlands and appropriate conservation management techniques. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Landcare and community groups	LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Index of wetland condition assessments. Investigating Priorities for Wetland Connectivity in the Wimmera CMA region. Social and Economic Drivers of Wetland Rehabilitation. Wimmera Invasive Plant and Animal Management Strategy (2019). Trust for Nature's Statewide Conservation Plan 2021-2030.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		nature and active community groups. **Recreational opportunities** including walking, fishing, yabbying, camping, bird watching, water sports and duck hunting. **Economic values**, including water supply, tourism and community events centred around wetlands.	reduced connectivity between wetland habitat.				

Medium-term outcome 4.

Drought refuges support native species' survival and resilience during dry periods.

Outcome statement:

Drought refuges in Wimmera waterways are identified and protected, with their condition and habitat maintained to support the survival of native plants and animals during extended dry conditions and drought. These refuges, including permanent or near permanent pools and wetlands, provide critical habitat including water and food resources and shelter when surrounding waterways experience low or no flow.

Targeted management improves the quality and persistence of refuge habitats, reducing degradation pressures and increasing their ability to support native water-dependent plants and animals through periods of extended dry conditions and drought.

What will success look like?

- Key drought refuges are protected and maintained so they consistently hold water and provide habitat during dry periods.
- Major threats are effectively controlled at drought refuge sites, such as stock access, and invasive plants and animals.
- During and after dry conditions and drought, native fish, water-dependent plants, and waterbirds continue to be present at drought refuge sites, with evidence of recolonisation into surrounding waterways when flows return.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Lower Wimmera River This area is the **Lower Wimmera Flagship waterway**.	**Theme:** • Rivers and streams **Local area:** • Hindmarsh	**Victorian Heritage River** under the *Heritage Rivers Act 1992* (Vic) due to its significant nature conservation, recreation, scenic and cultural heritage attributes. **High cultural significance** for Wotjobaluk Nations Peoples. **Highly connected and high-quality native vegetation corridor** in an agricultural landscape, providing the most significant continuous tract of native vegetation in the northern half of the Wimmera, linking the Little Desert, Wimmera River terminal lakes system and Wyperfeld National Parks. Important for enabling species	**Reduced river flows** due to: • **Water regulation and extraction.** • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Saline groundwater intrusion** impacting water quality and habitat.	**Water for the environment.** **Drought refuge site management plans**, identifying "complementary measures" to enhance habitat and reduce threats to environmental values. **Revegetating riparian land** beside drought refuges. **Control pest plants and animals** and monitor to inform control effort.	Wimmera CMA Barengi Gadjin Land Council GWMWater Victorian Environmental Water Holder Commonwealth Environmental Water Holder Parks Victoria Regional DEECA (public lands staff) Hindmarsh Shire Council	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO2 - Values and condition of waterways with formally recognised significance are maintained or improved. LO3 - Waterway condition, connectivity and resilience is	Monitoring program design for drought refuges in Mount Cole Creek and the Lower Wimmera River (2026). Wimmera CMA's water quality monitoring program's data and annual reports. Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		movement under climate change scenarios. **Threatened species and vegetation communities,** including nationally threatened Australasian bittern, floodplain rustyhood and riparian vegetation communities. **Native fish**, including freshwater catfish, golden perch, silver perch, flat-headed gudgeon, carp gudgeon and Australian smelt. **High social, recreational and amenity value**, including recreational fishing, Dimboola and Jeparit townships, and Wimmera River Discovery Trail.	**Invasive plants**, particularly bridal creeper. **Over-grazing of native vegetation** by rabbits and native herbivores. **Foxes** preying on native animals. **Carp** increasing instream turbidity and impacting aquatic plants and native fish. **Recreational fishing** impacting on native species persistence. **Other impacts of recreation and access**, such as off-road vehicles, littering, and illegal firewood removal.	**Stock exclusion fencing** and grazing management. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.		improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained.	terminal lakes (2024). Dry Contingency Flow Plan (2025). Wimmera Native Fish Management Plan (2022). Wimmera Invasive Plant and Animal Management Strategy (2019). Wimmera Proportion of Waterways Protected (2024). Flagship waterway planning documents. Wimmera Carp Management Plan.
Wimmera Mallee Pipeline-watered wetlands: 1. **Wal Wal Swamp.** 2. **Mutton Swamp.** 3. **Sawpit Swamp.** 4. **Crow Swamp.** 5. **Carapugna.**	**Theme:** • Wetlands **Local areas:** • Hindmarsh • Upper catchment • Yarriambiack and Buloke	**Support diverse native plants and animals**. **Support threatened species.** **Provide wetland habitat and drought refuges** in a largely dry agricultural landscape. **Most are in relatively good condition**. **High cultural significance** for Wotjobaluk Nations Peoples. **High social value -** important for retaining water-based habitat in	**Reduced flows** due to: • **Water regulation and extraction.** • **Changes to stock and domestic water delivery** following installation of the Wimmera Mallee Pipeline**.** • **Climate change and drought** contributing to	**Water for the environment.** **Infrastructure improvements** to maximise outcomes from environmental water delivery. **Control pest plants and animals** and monitor to inform control effort**.** **Support Barengi Gadjin Land Council's self-**	Wimmera CMA Barengi Gadjin Land Council GWMWater Victorian Environmental Water Holder Parks Victoria Regional DEECA (public lands staff)	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience is improved, providing	Environmental Watering Management Plan for Wimmera Mallee Pipeline Wetlands (2016). Wimmera Invasive Plant and Animal Management Strategy (2019).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
6. Krong Swamp. **7. Tarkedia Dam.** **8. Harcoans.** **9. Fieldings Dam.** **10. Challambra Swamp.** **11. Opies Dam.** **12. Pinedale.** **13. Schultz Koschizke.**		a dry landscape to support native species following replacement of an open channel and dam water supply system with the Wimmera Mallee Pipeline network.	reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. • **Changes to landscape drainage patterns** arising from surrounding land use such as roads and agriculture. **Invasive plants**, particularly agricultural weeds and grass species including Wimmera ryegrass. **Over-grazing of native vegetation** by rabbits and native herbivores. **Foxes** preying on native animals. **Changes to hydrology** such as channels and dams in the wetland basin and surrounds. **Lack of connectivity**, being surrounded by agricultural land.	**determination**, including support for traditional methods of vegetation management such as cultural burning to enhance wetland habitat. **Monitor vegetation condition and wildlife** to assess progress towards achieving objectives and inform future management. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Private landholders	habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
			Water quality of runoff, due to surrounding agricultural land uses. **Illegal firewood removal.**				
MacKenzie River, Burnt Creek and Bungalally Creek	**Theme:** • Rivers and streams **Local areas:** • Horsham	**Supports remnant Wimmera populations** of platypus and river blackfish. **Threatened animals**, including platypus, western swamp crayfish, Glenelg spiny crayfish, southern pygmy perch, obscure galaxias and freshwater mussels. **Threatened plants**, including nationally threatened Wimmera bottlebrush and spiny lignum. **Key native fish breeding location** for southern pygmy perch, river blackfish and obscure galaxias. **Provides a largely connected habitat corridor** through a largely agricultural landscape, connecting the Grampians National Park with the Wimmera River and Little Desert National Park. Important for enabling species movement under climate change scenarios. **Drought refuge pools** providing habitat during dry periods and drought. **High cultural significance** for Wotjobaluk Nations Peoples.	**Changes to hydrology** due to: • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. • **Changes to landscape drainage patterns** arising from surrounding land use such as roads and agriculture. **Invasive plants**, particularly bridal creeper and capeweed. **Over-grazing of native vegetation** by rabbits and native herbivores. **Foxes** preying on native animals.	**Water for the environment.** **Investigate options, feasibility, costs and benefits** of providing environmental water to drought refuge pools from new water supply pipelines. **If feasible:** • **Establish and protect drought refuge sites.** • **Drought refuge site management plans**, identifying "complementary measures" to enhance habitat and reduce threats to environmental values. **Revegetating riparian land** beside drought refuges. **Control pest plants and animals** and monitor to inform control effort**.**	Wimmera CMA Barengi Gadjin Land Council GWMWater Victorian Environmental Water Holder Parks Victoria Regional DEECA (public lands staff)	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Burnt Creek and MacKenzie River flow optimisation report (2019). Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks (2025). Wimmera Native Fish Management Plan (2022). MacKenzie River Waterway Action Plan (2004). Wimmera Invasive Plant and Animal Management Strategy (2019). Waterway Action Plans for the MacKenzie River (2004) and Burnt Creek (2005). Wimmera Proportion of Waterways

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		High social and economic values, particularly key tourist areas in the Grampians National Park and surrounds. **High community values and stewardship**, including active Landcare network and groups.	**Carp** increasing instream turbidity and impacting aquatic plants and native fish. **Bushfire**, impacting water quality and riparian vegetation and fauna. **Impacts of recreation and access**, such as off-road vehicles, littering, and illegal firewood removal.	**Stock exclusion fencing** and grazing management. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge. **Monitor vegetation condition and wildlife** to assess progress towards achieving objectives and inform future management.			Protected – Stage 2. Final Report (2024). Wimmera Carp Management Plan.
Mount Cole Creek	**Theme:** • Rivers and streams **Local areas:** • Upper catchment	**Threatened species**, including western swamp crayfish and southern pygmy perch. Other small-bodied native fish including obscure galaxias and flat-headed gudgeon. **High quality native vegetation** in sections. **Drought refuge pools** providing habitat during dry periods and drought. **Contributes to landscape connectivity**, as part of the Grampians to Pyrenees Biolink vision. **High social and community values and stewardship**, including active Landcare	**Reduced river flows** due to: • **Water regulation and extraction**, with water harvested into Mount Cole Reservoir upstream and farm dams. • **Climate change and drought** contributing to reduced rainfall and runoff and declining groundwater levels, potentially reducing the persistence of refuge pools. • **Agricultural land management**	**Water for the environment.** **Drought refuge site management plans**, identifying "complementary measures" to enhance habitat and reduce threats to environmental values. **Revegetating riparian land** to improve habitat, connectivity and stability of soils. **Control pest plants and animals** and monitor to inform control effort.	Wimmera CMA GWMWater Eastern Maar Aboriginal Corporation Victorian Environmental Water Holder Parks Victoria Regional DEECA (public lands staff) Project Platypus Landcare Network	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO5 - Waterways with high	Mount Cole Creek Flows Reassessment (2021) Mount Cole Creek Flows Investigation – Technical Analysis Report (2020). Mount Cole Creek Waterway Action Plan (2005). Wimmera Native Fish Management Plan (2022). Wimmera Invasive Plant and Animal

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		network and groups. Dedicated stewardship of the creek by Landcare and local landholders. Community recreation facilities located beside the creek.	**practices** that retain moisture in paddocks, reducing runoff. **Grazing by stock.** **Bed and bank erosion**, contributing to sediment moving downstream, impacting on water quality and refuge pool habitat. **Rabbits** over-grazing native vegetation and contributing to erosion. **Invasive plants**, particularly blackberry and gorse. **Foxes** preying on native animals. **Bushfire**, impacting water quality and riparian vegetation and fauna.	**Stock exclusion fencing** and grazing management. **Erosion control,** bed and bank stabilisation works. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge. **Monitor vegetation condition and wildlife** to assess progress towards achieving objectives and inform future management.	Crowlands-Warrak Landcare Group Private landholders	environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Management Strategy (2019).
Upper Wimmera River and tributaries (medium priority for drought refuges)	**Theme:** • Rivers and streams **Local areas:** • Upper catchment	**High environmental values**, including small-bodied native fish such as southern pygmy perch, obscure galaxias, mountain galaxias, frogs, native vegetation. **Threatened species**, including western swamp crayfish and southern pygmy perch.	**Reduced river flows** due to: • **Water extraction**, with water harvested into farm dams. • **Climate change and drought** contributing to reduced rainfall and runoff and declining	**Investigate options, feasibility, costs and benefits** of providing environmental water to drought refuge pools from new water supply pipelines. **If feasible:** • **Establish drought refuge sites.**	Wimmera CMA GWMWater Eastern Maar Aboriginal Corporation Victorian Environmental Water Holder	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination.	Wimmera Native Fish Management Plan (2022). Wimmera CMA's native fish surveys (various). Southern Wimmera Pyrenees pipeline - environmental

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		High quality and threatened native vegetation communities in sections. **Drought refuge pools** provide habitat during dry periods and drought. **Unique geomorphology**, including chains of ponds in some waterways. **Contributes to landscape connectivity**, for the Grampians to Pyrenees Biolink vision. Important for enabling species movement under climate change scenarios.	groundwater levels, potentially reducing the persistence of refuge pools. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Grazing by stock.** **Bed and bank erosion**, contributing to sediment moving downstream, impacting on water quality and refuge pool habitat. **Rabbits** over-grazing native vegetation and contributing to erosion. **Invasive plants**, particularly bridal creeper, blackberry and gorse. **Foxes** preying on native animals. **Bushfire**, impacting water quality and riparian vegetation and fauna.	• **Water for the environment.** • **Drought refuge site management plans**, identifying "complementary measures" to enhance habitat and reduce threats to environmental values. **Revegetating riparian land** to improve habitat, connectivity and stability of soils. **Control pest plants and animals** and monitor to inform control effort**.** **Stock exclusion fencing** and grazing management. **Erosion control,** bed and bank stabilisation works. **Monitor vegetation condition and wildlife** to assess progress towards achieving objectives and inform future management. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Parks Victoria Regional DEECA (public lands staff) Project Platypus Landcare Network Landcare groups Private landholders	LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	watering opportunities analysis. Waterway Action Plans (various). Wimmera Invasive Plant and Animal Management Strategy (2019).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Yarriambiack Creek (medium priority for drought refuges)	**Theme:** • Rivers and streams **Local areas:** • Yarriambiack and Buloke	**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. Links Darlot Swamp, Barrabool Flora and Fauna Reserve and Lakes Coorong and Lascelles during flood. Important for enabling species movement under climate change scenarios. **High community values and stewardship**, including active Landcare network and groups.	**Reduced river flows** due to: • **Water regulation and extraction**. • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Rabbits and other herbivores** over-grazing native vegetation and contributing to erosion. **Invasive plants**, particularly bridal creeper, horehound, African boxthorn and others. **Foxes** preying on native animals. **Surrounding land use**, flowing through a broadacre cropping landscape with many areas having narrow riparian buffer zones.	**Investigate options, feasibility, costs and benefits** of providing environmental water to drought refuge pools from new water supply pipelines. **If feasible:** • **Water for the environment.** • **Drought refuge site management plans**, identifying "complementary measures" to enhance habitat and reduce threats to environmental values. **Revegetating riparian land** to improve habitat, connectivity and stability of soils. **Control pest plants and animals** and monitor to inform control effort**.** **Stock exclusion fencing** and grazing management. **Erosion control,** bed and bank stabilisation works. **Monitor vegetation condition and wildlife** to assess progress towards achieving objectives and	Wimmera CMA GWMWater Barenji Gadjin Land Council Victorian Environmental Water Holder Parks Victoria Regional DEECA (public lands staff) Yarrilinks Landcare Network Landcare groups Private landholders	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Yarriambiack Creek Watering (Wimmera CMA internal analysis). Yarriambiack Creek Waterway Action Plan (2018). Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024). Wimmera Invasive Plant and Animal Management Strategy (2019).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
			Grazing by stock (low density and occurrence). **Bushfire**, impacting water quality and riparian vegetation and fauna.	inform future management. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.			

Medium-term outcome 5.

Risks to water quality in Wimmera waterways are managed where possible to reduce impacts on values.

Outcome statement:

Risks to Wimmera waterway values from poor water quality will be proactively managed in high priority areas through monitoring and coordinated management addressing factors including erosion, sediment runoff, nutrient loads, salinity and reduced flows.

Proactive and targeted responses to extreme events such as low flows, drought, flooding and bushfire in water catchments will help protect waterway values. This includes timely detection and management of risks such as low dissolved oxygen and blackwater, with actions taken where possible to prevent or minimise impacts.

Management approaches will continue to evolve as feasible new technologies and techniques become available, strengthening the region's ability to respond effectively to risks.

Effective monitoring, coordination and response to water quality risks will help to protect environmental, cultural and community values over time.

What will success look like?

- Monitoring reliably detects emerging risks to water quality, enabling timely and targeted responses.
- Impacts from extreme events are detected and minimised. Risks associated with extreme events such as drought, low flows, flooding and bushfire are identified and managed, reducing the severity and duration of impacts such as blackwater events and fish deaths.
- Over the long-term, water quality is stable or improving in high-priority areas. Key indicators show no long-term decline and, where possible, measurable improvement.
- Catchment pressures are actively reduced. Erosion and sediment and nutrient runoff are effectively managed through coordinated, on-ground actions.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Lower Wimmera River - Wimmera Heritage River from Polkemmet to Lake Hindmarsh. **Dimboola and Jeparit weir pools** This is part of the **Lower Wimmera Flagship waterway**.	**Themes:** • Rivers and streams **Local areas:** • Hindmarsh	**Victorian Heritage River** under the *Heritage Rivers Act 1992* (Vic) due to its significant nature conservation, recreation, scenic and cultural heritage attributes. **High cultural significance** for Wotjobaluk Nations Peoples. **Highly connected and high-quality native vegetation corridor.** Important for enabling species movement	**Reduced river flows** due to: • **Water regulation and extraction.** • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff.	**Water for the environment.** **Revegetating riparian and floodplain land** to reduce saline groundwater intrusion where groundwater is close to the surface, stabilise soil and filter runoff.	Wimmera CMA Barengi Gadjin Land Council Victorian Environmental Water Holder Commonwealth Environmental Water Holder Private landholders	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO2 - Values and condition of waterways with formally recognised significance are	Understanding hypoxic blackwater events in the Wimmera River Catchment (2022). Wimmera Catchment Hypoxic Blackwater Coordination Plan (2025). Wimmera Saline Pools Investigation.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		under climate change scenarios. **Threatened species and vegetation communities,** including nationally threatened Australasian bittern, floodplain rustyhood and riparian vegetation communities. **Terminal lakes support tens of thousands of waterbirds** when flooded, including threatened, migratory and breeding species. **Native fish** including freshwater catfish, golden perch, silver perch and other native aquatic species. **High social, recreational and amenity values**, including Dimboola and Jeparit weir pools, camping areas, bike and walking trail, picnicking, swimming and recreational fishing.	**Climate change** leading to increased: • Water temperature and decreased flow volumes and frequency, increasing the risk of poor water quality, low dissolved oxygen, blackwater and blue green algae. • Fire frequency, extent and severity. **Saline groundwater intrusion** impacting water quality, aquatic plants and animals including native fish, and habitat. **Carp** increasing instream turbidity and impacting aquatic plants and native fish. **Poor water quality** impacting on amenity, recreation and cultural wellbeing. **Bushfire**, impacting water quality and riparian vegetation and aquatic plants and animals. **Decline of key water regulation infrastructure**, particularly Jeparit weir pool, impacting on safe management of flows including water for the	**Stock exclusion fencing** and grazing management. **Maintain key flow infrastructure.** **Reduce carp impacts.** **Actions upstream** including erosion control and riparian improvements. **Water quality monitoring** to detect risks and inform management responses. **Integrated Water Management,** investigating increased reuse of treated water to reduce releases into the river. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Parks Victoria Regional DEECA (public lands staff) Landcare groups Hindmarsh Shire Council Community recreation groups including anglers Waterwatch Jeparit	maintained or improved. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO4 - Water is of sufficient quality to support waterway values and uses at important areas for water supply, cultural, environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Wimmera Carp Management Plan. Flagship waterway planning documents. Emergency Preparedness and Response Plan Wimmera (2021). Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024). Wimmera Proportion of Waterways Protected (2024). Wimmera CMA's water quality monitoring program's annual reports.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
			environment, floodwaters, and social, economic and recreational values.				
Mid Wimmera River. **Horsham weir pool.**	**Themes:** • Rivers and streams **Local areas:** • Horsham	**High cultural significance** for Wotjobaluk Nations Peoples. **Relatively high proportion of connected and protected native vegetation** in generally moderate condition, with sections in good condition. **Highly connected native vegetation corridor** linking the Grampians and Little Desert National Parks through an agricultural landscape. Important for enabling movement to refuge areas under climate change scenarios. **Native fish** including golden perch, silver perch, freshwater catfish, flat-headed gudgeon, southern pygmy perch, Australian smelt, common and obscure galaxias. **Threatened species and native vegetation communities,** including nationally threatened Australian shoveler, freshwater catfish and riparian vegetation communities.	**Reduced river flows** due to: • **Water regulation and extraction.** • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Climate change** leading to increased: • Water temperature and decreased flow volumes and frequency, increasing the risk of poor water quality, low dissolved oxygen, blackwater and blue green algae. • Fire frequency, extent and severity. **Grazing by stock.** **Carp** increasing instream turbidity and impacting aquatic plants and native fish. **Erosion**, particularly occurring upstream	**Water for the environment.** **Revegetating riparian land** to stabilise soil and filter runoff. **Stock exclusion fencing** and grazing management. **Reduce carp impacts.** **Actions upstream** including erosion control and riparian improvements. **Water quality monitoring** to detect risks and inform management responses. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Wimmera CMA Barengi Gadjin Land Council Victorian Environmental Water Holder Commonwealth Environmental Water Holder Private landholders Parks Victoria Regional DEECA (public lands staff) Landcare groups Horsham Rural City Council Community recreation groups including anglers	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO4 - Water is of sufficient quality to support waterway values and uses at important areas for water supply, cultural, environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking	Wimmera CMA's water quality monitoring program's annual reports. Wimmera Southern Mallee: Socio-Economic Value of Recreational and Environmental Water (Various 2016-2024). Understanding hypoxic blackwater events in the Wimmera River Catchment (2022). Wimmera Catchment Hypoxic Blackwater Coordination Plan (draft 2025). Emergency Preparedness and Response Plan Wimmera (2021).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		High social and recreational value, particularly around Horsham weir pool and recreational fishing areas. Popular for walking, running, cycling picnicking, camping and major community events. **Economic values** include tourism, major events and water supply. **High amenity value** for Horsham township and surrounds.	leading to increased turbidity and nutrients. **Poor water quality** impacting on amenity, recreation, cultural wellbeing and environmental values. **Bushfire**, impacting water quality and riparian vegetation and aquatic plants and animals.	**Integrated Water Management,** investigating increased reuse of treated water to reduce releases into the river.		action to care for waterways.	
Upper Wimmera River and tributaries upstream of Glenorchy. **Wimmera River headwaters and**	**Theme:** • Rivers and streams **Local areas:**	**High environmental values**, including small-bodied native fish such as southern pygmy perch, obscure galaxias, mountain galaxias, frogs, native vegetation.	**Reduced river flows** due to: • **Water extraction**, with water harvested into farm dams. • **Climate change and drought** contributing to	**Water for the environment** – Mount Cole Creek drought refuge sites.	Wimmera CMA Eastern Maar Aboriginal Corporation Parks Victoria	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the	Wimmera Proportion of Waterways Protected (2024). Wimmera Geomorphic Categorisation and

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
catchment, including Mount Cole/Beeripmo State Forest.	• Upper catchment	**Threatened species**, including western swamp crayfish and southern pygmy perch. **High quality and threatened native vegetation communities** in sections. **Cultural heritage values.** **Drought refuge pools** provide habitat during dry periods and drought. **Unique geomorphology**, including chains of ponds in some waterways. **Contributes to landscape connectivity**, for the Grampians to Pyrenees Biolink vision. Important for enabling species movement under climate change scenarios. **Town water and irrigation supply.** **Landscape amenity.** **Recreational values.** **Strong community connection to waterways**, demonstrated by high level of stewardship and Landcare participation.	reduced rainfall and runoff and declining groundwater levels. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Climate change** leading to increased: • Water temperature and decreased flow volumes and frequency, increasing the risk of poor water quality, low dissolved oxygen, blackwater and blue green algae. • Fire frequency, extent and severity. **Grazing by stock.** **Erosion**, contributing to sediment moving downstream, impacting on water quality and instream habitat. **Rabbits** over-grazing native vegetation and contributing to erosion. **Bushfire**, impacting water quality and riparian vegetation and fauna.	**Erosion control,** bed and bank stabilisation works. **Revegetating riparian land** to stabilise soil and filter runoff. **Control rabbits.** **Stock exclusion fencing** and grazing management. **Water quality monitoring** to detect risks and inform management responses. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge. **Community education and knowledge building**, particularly regarding land management practices that stabilise soils and reduce erosion.	Regional DEECA (public lands staff) Victorian Environmental Water Holder Trust for Nature Project Platypus Landcare Network Landcare groups Private landholders	Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO4 - Water is of sufficient quality to support waterway values and uses at important areas for water supply, cultural, environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Stream Condition Report (2003). Wimmera Native Fish Management Plan (2022). Wimmera CMA's native fish surveys (various). Waterway Action Plans (various). Wimmera Invasive Plant and Animal Management Strategy (2019). Emergency Preparedness and Response Plan Wimmera (2021).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Mount William Creek catchment and Lake Lonsdale.	**Themes:** • Rivers and streams • Wetlands **Local areas:** • Upper catchment	**High environmental values**, including small-bodied native fish such as southern pygmy perch, obscure galaxias, mountain galaxias, frogs, native vegetation. **Threatened species**, including western swamp crayfish and southern pygmy perch. **High quality and threatened native vegetation communities** in sections. **Cultural heritage values.** **Drought refuge pools** provide habitat during dry periods and drought. **Water supply** for towns, farms, and water for the environment. **Landscape amenity.** **Recreation and tourism**, including Grampians National Park tourist locations and Lake Lonsdale, bushwalking, camping, fishing, boating and yabbying. **Strong community connection to waterways**, demonstrated by high level of stewardship and Landcare participation.	**Reduced river flows** due to: • **Water extraction**, with water harvested into farm dams. • **Climate change and drought** contributing to reduced rainfall and runoff and declining groundwater levels. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Climate change** leading to increased: • Water temperature and decreased flow volumes and frequency, increasing the risk of poor water quality, low dissolved oxygen, blackwater and blue green algae. • Fire frequency, extent and severity. **Grazing by stock.** **Erosion**, contributing to sediment moving downstream, impacting on water quality and instream habitat. **Rabbits** over-grazing native vegetation and contributing to erosion.	**Water for the environment** – Mount William Creek. **Erosion control,** bed and bank stabilisation works. **Revegetating riparian land** to stabilise soil and filter runoff. **Control rabbits.** **Stock exclusion fencing** and grazing management. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge. **Community education and knowledge building**, particularly regarding land management practices that stabilise soils and reduce erosion.	Wimmera CMA Eastern Maar Aboriginal Corporation Parks Victoria Regional DEECA (public lands staff) Victorian Environmental Water Holder Trust for Nature Project Platypus Landcare Network Landcare groups Private landholders	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO4 - Water is of sufficient quality to support waterway values and uses at important areas for water supply, cultural, environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Wimmera Proportion of Waterways Protected (2024). Various Waterway Action Plans. Wimmera Geomorphic Categorisation and Stream Condition Report (2003). Wimmera Invasive Plant and Animal Management Strategy (2019). Wimmera Native Fish Management Plan (2022). Wimmera CMA's native fish surveys (various). Emergency Preparedness and Response Plan Wimmera (2021).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
			Bushfire, impacting water quality and riparian vegetation and fauna.				
Lake Bellfield and catchment.	**Themes:** • Rivers and streams • Wetlands **Local areas:** • Upper catchment	**Environmental values** including birdlife, wildlife and part of Grampians National Park. **Water supply** for towns, farms, recreational lakes and environmental wetlands. **Recreation and tourism**, including Grampians National Park, bushwalking, camping, fishing, picnicking.	**Bushfire**, impacting water quality and riparian vegetation and fauna. **Climate change** leading to increased fire frequency, extent and severity. **High risk of bushfire occurring** due to Grampians National Park location.	**Planning to minimise bushfire risk and impact.** **Monitor and respond following bushfire**, including introducing sediment control measures where needed.	Forest Fire Management Victoria Parks Victoria GWMWater Wimmera CMA First Nations groups	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO4 - Water is of sufficient quality to support waterway values and uses at important areas for water supply, cultural, environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained.	Emergency Preparedness and Response Plan Wimmera (2021).
Lake Wartook and catchment.	**Themes:** • Rivers and streams • Wetlands **Local areas:** • Upper catchment	**Supports remnant Wimmera populations** of platypus and river blackfish. **Threatened animals**, including platypus, western swamp crayfish, Glenelg spiny crayfish, southern pygmy perch, obscure galaxias and freshwater mussels. **Threatened plants**, including nationally threatened	**Bushfire**, impacting water quality and riparian vegetation and fauna. High risk due to Grampians National Park location. **Climate change** leading to increased fire frequency, extent and severity.	**Planning to minimise bushfire risk and impact.** **Monitor and respond following bushfire**, including introducing sediment control measures where needed.	Forest Fire Management Victoria Parks Victoria GWMWater Wimmera CMA First Nations groups	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience is	Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks (2025). Emergency Preparedness and Response Plan Wimmera (2021).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		Wimmera bottlebrush and spiny lignum. **Key native fish breeding location** for southern pygmy perch, river blackfish and obscure galaxias. **Provides a largely connected habitat corridor** through a largely agricultural landscape, connecting the Grampians National Park with the Wimmera River and Little Desert National Park. Important for enabling species movement under climate change scenarios. **Drought refuge pools** providing habitat during dry periods and drought. **High cultural significance** for Wotjobaluk Nations Peoples. **Water supply** for towns, farms and MacKenzie River, Burnt and Bungalally Creeks water for the environment. **Recreation and tourism**, including Grampians National Park, bushwalking, camping, fishing, picnicking. MacKenzie Falls and Zumsteins Picnic are among the park's most popular sites for day visitors.				improved, providing habitat that supports native species and native communities. LO4 - Water is of sufficient quality to support waterway values and uses at important areas for water supply, cultural, environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained.	

Medium-term outcome 6.

Waterways identified as high priority for recreation and amenity provide enhanced recreational opportunities and community benefits, while minimising impacts on their environmental values.

Outcome statement:

Waterways identified as high priority for recreation and amenity will provide improved access and experiences that support a range of community uses. Planning and management will balance recreational demand with environmental protection, ensuring that increased use does not compromise waterway health.

Enabling people to spend time in and around waterways will strengthen connections to nature, encouraging stewardship and a greater appreciation of environmental values. Healthy, well-managed waterways will enhance community wellbeing by providing spaces for relaxation, social connection and outdoor activity.

As a result, these waterways will deliver high-quality, sustainable recreational experiences and amenity, while maintaining and enhancing their ecological values for future generations.

What will success look like?

- Waterways that are high priority for recreation are accessible and well used. People visit regularly, supported by safe and inclusive access for a range of recreational activities.
- Environmental condition including bank erosion, water quality and riparian vegetation show no measurable decline because of recreational use.
- Visitor impacts are effectively managed. Infrastructure and other mechanisms manage recreational access and use, preventing environmental damage.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Lower Wimmera River - downstream of Polkemmet with high recreational value, especially: • **Weir pools at Dimboola and Jeparit.** • **Wimmera River Discovery Trail between Dimboola and Jeparit.** • **Lake Hindmarsh.** • **Lake Albacutya.**	**Themes:** • Rivers and streams • Wetlands **Local areas:** • Hindmarsh	**Victorian Heritage River** under the *Heritage Rivers Act 1992* (Vic) due to its significant nature conservation, recreation, scenic and cultural heritage attributes. **High cultural significance** for Wotjobaluk Nations Peoples. Important for spending time on Country. **High amenity values.**	**Reduced river flows and lake inundation** impacting on amenity and recreational values. **Bank erosion** threatening environmental, cultural and recreational values and activities. **Impacts of recreation and access**, such as off-road vehicles, littering, and illegal firewood removal. **Trees and limbs falling in the river, and aquatic vegetation** like cumbungi, impacting on	**Erosion control,** bed and bank stabilisation works. **Mechanisms that protect environmental values and cultural heritage from the impacts of recreation and support safe and sustainable access.** Examples include collaborating with key organisations and community groups to develop and implement management plans, install infrastructure, and manage vegetation and trees where appropriate. **Town weir pool management plans.**	Wimmera CMA Barengi Gadjin Land Council Parks Victoria Regional DEECA (public lands staff) Landcare groups Hindmarsh Shire Council	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO2 - Values and condition of waterways with formally recognised significance are maintained or improved. LO4 - Water is of sufficient quality to	Wimmera River Waterway Management Plan Dimboola. Wimmera Southern Mallee: Socio-Economic Value of Recreational and Environmental Water (Various 2016-2024). Flagship waterway planning documents.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
This area is the **Lower Wimmera Flagship waterway**.		**High recreational values**, including community events, walking, camping and fishing. **High visitation and contribution to regional and local economies**, particularly from town weir pools. **Lakes Hindmarsh and Albacutya attract visitors and tourists** for camping, bird watching, and water-based activities when holding water.	safe access and cultural values in priority recreational areas such as weir pools. **Decline of key water regulation infrastructure**, particularly Jeparit weir pool, impacting on safe management of flows including water for the environment flows, floodwaters, and social, economic and recreational values.	**Maintain key flow infrastructure.** **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Community recreation groups	support waterway values and uses at important areas for water supply, cultural, environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	
Mid Wimmera River especially: • **Horsham weir pool, and the river immediately upstream and downstream of Horsham.**	**Themes:** • Rivers and streams **Local areas:** • Horsham	**High cultural significance** for Wotjobaluk Nations Peoples. Important for spending time on Country. **High amenity values.** **High recreational values**, including community events, walking, camping, swimming and fishing. **High visitation and contribution to**	**Reduced river flows** impacting on amenity and recreational values. **Impacts of recreation and access**, such as off-road vehicles, littering, and illegal firewood removal. **Trees and limbs falling in the river, and aquatic vegetation** like cumbungi, impacting on safe access and cultural values in priority	**Mechanisms that protect environmental values and cultural heritage from the impacts of recreation and support safe and sustainable access.** Examples include collaborating with key organisations and community groups to develop and implement management plans, install infrastructure, and manage vegetation and trees where appropriate. **Town weir pool management plans.**	Wimmera CMA Barengi Gadjin Land Council Private landholders Parks Victoria Regional DEECA (public lands staff) Landcare groups	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO4 - Water is of sufficient quality to support waterway values and uses at important areas for water supply, cultural,	Wimmera Southern Mallee: Socio-Economic Value of Recreational and Environmental Water (Various 2016-2024). Horsham: City to River Vision and Masterplan (2020).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		regional and local economies, particularly from Horsham weir pool.	recreational areas such as weir pools.	**Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Horsham Rural City Council Community recreation groups	environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	
Yarriambiack Creek, especially: • **Warracknabeal weir pool.** • **Brim weir pool.**	**Themes:** • Rivers and streams **Local areas:** • Yarriambiack and Buloke	**High cultural significance** for Wotjobaluk Nations Peoples. Important for spending time on Country. **High amenity values.** **High recreational values**, including community events, walking, camping, swimming and fishing. **High visitation and contribution to regional and local economies**, particularly from Horsham weir pool.	**Impacts of recreation and access**, such as bank erosion, native vegetation removal and littering. **Trees and limbs falling in the river, and aquatic vegetation** like cumbungi, impacting on safe access and cultural values. **Legacy water quality issues**, contributing to blue-green algae blooms. **Sedimentation affecting pools and safe recreational access** in Warracknabeal weir pool. **Invasive plants**, particularly bridal creeper.	**Mechanisms that protect environmental values and cultural heritage from the impacts of recreation and support safe and sustainable access.** Examples include collaborating with key organisations and community groups to develop and implement management plans, install infrastructure, and manage vegetation and trees where appropriate. **Town weir pool management plans.** **Sediment removal**, as required. **Control weeds** and monitor to inform control effort**.** **Maintain collaborative partnerships** with stakeholders.	Wimmera CMA Barengi Gadjin Land Council Private landholders Parks Victoria Regional DEECA (public lands staff) Landcare groups Yarriambiack Shire Council Community recreation groups	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO4 - Water is of sufficient quality to support waterway values and uses at important areas for water supply, cultural, environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking	Wimmera Southern Mallee: Socio-Economic Value of Recreational and Environmental Water (Various 2016-2024).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
				Engage landholders and community groups to increase collaboration, participation and knowledge.		action to care for waterways.	
Wetlands with high social and economic value, especially: • **Nhill Lake.** • **Taylors Lake.** • **Green Lake.** • **Lake Toolondo.** • **Lake Fyans.** • **Lake Bellfield.** • **Lake Wartook.** • **Lake Lonsdale.** • **Lake Charlegrark.** • **Lake Wallace.** • **Lake Ratzcastle.** • **Lake Bringalbert.** • **Lake Marma.** • **Lake Watchem.**	**Themes:** • Wetlands **Local areas:** • Hindmarsh • Horsham • Upper catchment • West Wimmera • Yarriambiack and Buloke	**High amenity values.** **High recreational values**, including community events, walking, camping, swimming and fishing. **High visitation and contribution to regional and local economies**. **High cultural significance** for Wotjobaluk Nations Peoples. Important for spending time on Country. **Lake Marma and Lake Watchem have relative water security**, with flows provided from a recreational water entitlement. **Some lakes are water storages** for town, stock and domestic supply.	**Reduced inflows affecting the frequency and extent of lake inundation**, impacting on amenity and recreational values. **Riparian native vegetation encroachment**, enabled by increased drying, impacting on recreational access and safety. **Aquatic vegetation** like cumbungi and water ribbons, impacting on access and amenity. **Impacts of recreation and access**, such as bank erosion, native vegetation removal and littering. **Legacy water quality issues**, contributing to blue-green algae blooms. (NOTE: threats vary for different lakes and not all threats listed are present at all priority areas).	**Mechanisms that protect environmental values and cultural heritage from the impacts of recreation and support safe and sustainable access.** Examples include collaborating with key organisations and community groups to develop and implement management plans, install infrastructure, and manage vegetation and trees where appropriate. **Lake management plans**, developed and implemented in collaboration with key stakeholders and recreational user groups. **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Local councils GWMWater Wimmera CMA Barengi Gadjin Land Council Parks Victoria Regional DEECA (public lands staff) Committees of management Community recreation groups	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO4 - Water is of sufficient quality to support waterway values and uses at important areas for water supply, cultural, environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	Wimmera Southern Mallee: Socio-Economic Value of Recreational and Environmental Water (Various 2016-2024). Local government documents (various). Lake management plans (various).

Medium-term outcome 7.

Healthier waterways enable more On Country activities for First Nations People.

Outcome statement:

Healthier Wimmera waterways will enable more frequent and meaningful On Country activities for First Nations People. Feedback from First Nations groups indicates that people are more likely to visit and spend time on Country when waterways are healthy, with direct benefits for their wellbeing and culture. As waterway condition improves, including water quality and ecological health, cultural practices such as gathering, ceremony, teaching and caring for Country will be better supported.

Through ongoing partnerships with First Nations organisations, waterway management will recognise and support cultural values, access and use, building on past successes such as the enhancement of the Ranch Billabong beside the Wimmera River at Dimboola.

This approach supports self-determination by enabling First Nations People to lead, make decisions about, and actively care for their Country. In turn, it will strengthen connections to Country and support cultural wellbeing and the continued practice of culture.

What will success look like?

- First Nations People are spending more time on Country, with increased participation in cultural, recreational and community activities along waterways.
- Waterway sites of cultural significance are healthy, respected and actively cared for, enabling ongoing cultural use.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Barringgi Gadyin (Wimmera River) and terminal lakes - especially significant places including: • **Gurru (Lake Hindmarsh).** • **Ngalpakatia/Ngelpagutya (Lake Albacutya).** • **The Ranch Billabong.** • **The Common.** • **Antwerp property including Datchak Creek.** **MacKenzie River** **Yarriambiack Creek** **Wetlands and lakes.**	**Themes:** • Rivers and streams • Wetlands **Local areas:** • Hindmarsh • Horsham	**Victorian Heritage River** under the *Heritage Rivers Act 1992* (Vic) due to its significant nature conservation, recreation, scenic and **cultural heritage** attributes. **High cultural significance** for Wotjobaluk Nations Peoples. **Cultural heritage**, such as culturally modified trees, artefacts, middens, earth ovens, lore and Creation Stories.	**Reduced river flows and lake inundation** due to: • **Water regulation and extraction.** • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. **Saline groundwater intrusion** impacting water quality and habitat.	**Support Barengi Gadjin Land Council's self-determination**, including support for: • Strategic management of property along the Datchak Creek at Antwerp, and other culturally significant sites. • Supporting significant species populations including platypus, river blackfish, other native fish, freshwater mussels and freshwater crayfish. • Cultural burning.	Wimmera CMA Barengi Gadjin Land Council Private landholders Parks Victoria Regional DEECA (public lands staff) Landcare groups Hindmarsh Shire Council	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO2 - Values and condition of waterways with formally recognised significance are maintained or improved. LO3 - Waterway condition,	Growing What is Good: Country Plan. Voices of the Wotjobaluk Nations (2017). Barengi Gadjin Land Council Aboriginal Corporation: Nation Statement in Water is Life: Traditional Owner Access to Water Roadmap – Section B (2022). Wimmera Invasive Plant and Animal Management Strategy (2019).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		Connections to Country. **Cultural responsibilities and rights to care for Country.** **Waterways as living parts of Country.** All elements of waterways - water, land, plants, animals, and people - as part of an interconnected living system. **Traditional ecological knowledge** – cultural knowledge. **Significant species**, including native fish, platypus, freshwater mussels, freshwater crayfish and more. **Cultural practices** such as burning and caring for rivers, streams and wetlands. **Wellbeing associated with spending time on Country.**	**Invasive plants**, particularly bridal creeper, boneseed and boxthorn. **Over-grazing of native vegetation** by rabbits and native herbivores. **Foxes** preying on native animals. **Carp** increasing instream turbidity and impacting aquatic plants and native fish. **Floods** spreading weeds. **Bank erosion** threatening environmental, cultural and recreational values and activities. **Impacts of recreation and access**, such as off-road vehicles, littering, and illegal firewood removal.	• Riverbank and tree management. **Water for the environment.** **Revegetating riparian land.** **Control pest plants and animals** and monitor to inform control effort**.** **Erosion control,** bed and bank stabilisation works. **Stock exclusion fencing** and grazing management. **Protect environmental values and cultural heritage** from the impacts of recreation, while supporting **sustainable access.** **Maintain collaborative partnerships** with stakeholders. **Engage landholders and community groups** to increase collaboration, participation and knowledge.	Horsham Rural City Council Community recreation groups including anglers	connectivity and resilience is improved, providing habitat that supports native species and native communities. LO4 - Water is of sufficient quality to support waterway values and uses at important areas for water supply, cultural, environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained.	Wimmera Proportion of Waterways Protected (2024). Flagship waterway planning documents. Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2024). Lake Albacutya Ramsar site Ecological Character Description. Lake Albacutya Ramsar Site Annual Action Plan.

Medium-term outcome 8.

Key water-dependent species are supported in waterways that provide suitable habitat, including during dry conditions.

Outcome statement:

Key water-dependent species in the Wimmera will be better supported by waterways that provide suitable and connected habitat. Improved waterway condition, including adequate flow regimes and healthier riparian zones and instream habitat, will help sustain populations through periods of low water availability.

Targeted management actions will protect and enhance critical habitats, prioritising waterways that support species persistence during dry periods. As a result, key species will be more resilient to climate variability, with healthier populations and improved capacity to recover following dry periods, contributing to overall ecosystem health.

Priority species - Platypus

Priority species	Priority areas	What will success look like?	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Platypus	**MacKenzie River**	**A viable breeding population of platypus is sustained in the upper MacKenzie River.** **There is evidence of platypus dispersal into the mid and lower MacKenzie River.**	**Themes:** • Rivers and streams **Local areas:** • Horsham • Upper catchment	**Vulnerable in Victoria** under the *Flora and Fauna Guarantee Act 1988.* **At risk of extinction in the Wimmera region.** Once widespread across the Wimmera River system, the MacKenzie River supports the only known platypus	**Population viability** due to small numbers, low genetic diversity and restricted range, increasing risk of local and regional extinction. **Altered flow regimes due to water regulation and extraction**. **Climate change and drought** contributing to reduced rainfall, runoff, stream flows and availability of water for the environment. **Barriers to movement and dispersal**, such as weirs and dams and river flow connectivity, limiting recolonization of suitable habitat downstream. **Bushfire impacting habitat and water quality through**	**Protect the remnant population:** **Implement the Wimmera Platypus Management Plan.** **Water for the environment.** **Investigate options to maintain water flow, instream habitat and connectivity.** **Habitat improvement works** such as stock fencing, revegetation and re-snagging. **Planning to minimise bushfire risk and impact.** **Investigate the genetic diversity and health of the population.** **Monitor and respond following bushfire**, including	Wimmera CMA Barengi Gadjin Land Council GWMWater Victorian Environmental Water Holder Parks Victoria Forest Fire Management Victoria Regional DEECA (public lands staff)	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience are improved, providing habitat that supports native species and native communities.	Wimmera Platypus Management Plan (2026, draft). Wimmera CMA's platypus monitoring reports (various). Assessing the status of platypuses in the MacKenzie River (2024). Action statement – *Flora and Fauna Guarantee Act 1988* – Platypus (*Ornithorhynchu*

Priority species	Priority areas	What will success look like?	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		There is evidence of platypus dispersal via Burnt Creek into the Wimmera River.		population, with unverified anecdotal sightings elsewhere. **Stable remnant population.** **Successfully breeding.** **High cultural significance** for First Nations People. **High social value** for the local and regional community. **Management actions will benefit other water-dependent species**, including small-bodied native fish such as river blackfish, southern pygmy perch and obscure	**sediment and ash runoff.** High risk due to Grampians National Park location. Climate change likely to increase bushfire risk. **Fox predation**. **Illegal yabby traps**. **Littering**.	introducing sediment control measures where needed. **Monitoring of population health and breeding.**	Research agencies Landcare groups Private landholders	LO5 - Waterways with high environmental, social, cultural and economic values are maintained.	*s anatinus*) (2023). Assessing habitat suitability for platypuses in the Wimmera and identifying key flow variables (2024). Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks (2025). Greater Gariwerd Landscape Management Plan (Parks Victoria, 2021).

Priority species	Priority areas	What will success look like?	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome		Management Actions		Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
				galaxias, and freshwater crayfish including threatened western swamp crayfish and Glenelg spiny crayfish.							
	Burnt Creek	**The feasibility of restoring longitudinal connectivity in Burnt Creek is investigated,** to establish the viability of supporting natural dispersal of platypus from the MacKenzie River to the Wimmera River. **There is evidence of platypus dispersal via Burnt Creek into the Wimmera River.**	**Themes:** • Rivers and streams **Local areas:** Horsham	**High cultural significance for First Nations People.** **High social value,** with strong support for platypus to be restored from Landcare and local community members. **Potential to provide longitudinal connectivity between MacKenzie River and the**	**Barriers to movement and dispersal**, such as weirs and dams and river flow connectivity, limiting recolonization of suitable habitat downstream. **Altered flow regimes due to water regulation and extraction**. **Climate change and drought** contributing to reduced rainfall,	**Implement the Wimmera Platypus Management Plan.** **Water for the environment.** **Engineering works to restore longitudinal connectivity and remove barriers to natural dispersal** of platypus from the MacKenzie River to the Wimmera River. **Monitoring to detect**	Wimmera CMA Barengi Gadjin Land Council GWMWater Victorian Environmental Water Holder Regional DEECA (public lands staff) Research agencies Landcare groups Private landholders	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience are improved, providing habitat that	Wimmera Platypus Management Plan (2026, draft). Wimmera CMA's platypus monitoring reports (various). Action statement – *Flora and Fauna Guarantee Act 1988* – Platypus (*Ornithorhynchus anatinus*) (2023). Assessing habitat suitability for platypuses in the Wimmera and identifying	

Priority species	Priority areas	What will success look like?	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome		Management Actions		Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
					Wimmera River, supporting platypus dispersal and long-term viability if a population outside the MacKenzie River could be established. **Management actions will benefit other water-dependent species**, including small-bodied native fish including river blackfish, southern pygmy perch and obscure galaxias, and freshwater crayfish including threatened western swamp crayfish and Glenelg	runoff, stream flows and availability of water for the environment. **Habitat quality and connectivity** is patchy.	**platypus dispersal.** **Habitat improvement works** such as stock fencing, revegetation and re-snagging.		supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained.	key flow variables (2024). Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks (2025). Greater Gariwerd Landscape Management Plan (Parks Victoria, 2021).	

Priority species	Priority areas	What will success look like?	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome		Management Actions		Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
					spiny crayfish.						
	For further investigation: • **Mid Wimmera River.** • **Upper Wimmera River.** • **Fyans Creek.** • **Mount Cole Creek.** • **Mount William Creek.**	**A second population of platypus is established in a waterway with suitable habitat.**	**Themes:** • Rivers and streams **Local areas:** • Horsham Upper catchment	**High cultural significance for First Nations People.** **High social value,** with strong support for platypus to be restored from Landcare and local community members. **Platypus inhabited these waterways** prior to the Millenium Drought. **Improved water flows and lower risk of drying out**, due to reduced extraction for consumptive use and	**Lack of dispersal opportunities** from the MacKenzie River population. **Habitat quality and connectivity** is patchy. **Altered flow regimes due to water regulation and extraction**. **Climate change and drought** contributing to reduced rainfall, runoff, stream flows and availability of water for the environment.	**Implement the Wimmera Platypus Management Plan.** **Water for the environment.** **Investigate opportunities to return water flows to potential platypus habitat.** **Investigate the feasibility of reestablishing platypus in suitable habitat** via translocations. **Habitat improvement works** such as stock fencing, revegetation and re-snagging. **Surveys** to determine whether	Wimmera CMA Barengi Gadjin Land Council GWMWater Victorian Environmental Water Holder Commonwealth Environmental Water Holder Parks Victoria Regional DEECA (public lands staff) Research agencies Landcare groups Private landholders	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience are improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social,	Wimmera Platypus Management Plan (2026, draft). Wimmera CMA's platypus monitoring reports (various). Action statement – *Flora and Fauna Guarantee Act 1988* – Platypus (*Ornithorhynchus anatinus*) (2023). Assessing habitat suitability for platypuses in the Wimmera and identifying key flow variables (2024). Greater Gariwerd Landscape Management Plan (Parks Victoria, 2021).	

Priority species	Priority areas	What will success look like?	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome		Management Actions		Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
					significant water savings from the installation of the Wimmera Mallee Pipeline, completed in 2010. **Suitable habitat and food sources.** **Anecdotal sightings** since end of Millenium Drought.		platypus persist in some waterways.		cultural and economic values are maintained.		

Priority species – River blackfish

Priority species	Priority areas	What will success look like?	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
River blackfish	**MacKenzie River**	A viable breeding population of river blackfish is sustained in the MacKenzie River.	**Themes:** • Rivers and streams **Local areas:** • Horsham	**At risk of extinction in the Wimmera region.** Once widespread, the MacKenzie River supports the only remaining river blackfish population, with unverified anecdotal sightings elsewhere. **Actions will benefit other small-bodied native fish** including southern pygmy-perch and obscure galaxias. **Stable remnant population.** **Successfully breeding.**	**Long-term viability** due to small population size and restricted range, increasing risk of local and regional extinction. **Altered flow regimes due to water regulation and extraction**. **Climate change and drought** contributing to reduced rainfall, runoff, stream flows and availability of water for the environment. **Barriers to movement and dispersal**, such as weirs and dams and	**Water for the environment.** **Translocate river blackfish** from the Mount Zero Channel into the MacKenzie River. **Research** - increase understanding of river blackfish breeding in captivity. **Research** - potential release sites for captive-bred river blackfish. **Release captive-bred river blackfish into suitable habitat**, guided by research. **Research -** habitat enhancement that supports river blackfish. **Enhance habitat**, guided by research findings. **Monitor river blackfish survival and recruitment** at release sites. **During dry periods, translocate fish** from stressed and drying pools to more secure sites with suitable habitat. **Control carp** to reduce impacts on river blackfish.	Wimmera CMA Barengi Gadjin Land Council Victorian Fisheries Authority Native Fish Australia – Wimmera branch Arthur Rylah Institute GWMWater Victorian Environmental Water Holder Parks Victoria Regional DEECA (public lands staff)	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience are improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained.	Wimmera Native Fish Management Plan (2022). Victorian Fisheries Authority-Freshwater Fisheries Management Plan (2018-2028). Annual Wimmera Seasonal Watering Plans. Dry Contingency Inflow Plans. Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks (2025). Wimmera Carp

				High cultural significance for First Nations People. **High social value** for the local and regional community. **Management actions will benefit other water-dependent species**, including small-bodied native fish such as southern pygmy perch and obscure galaxias, and freshwater crayfish including threatened western swamp crayfish and Glenelg spiny crayfish.	river flow connectivity, limiting recolonization of suitable habitat downstream. **Bushfire impacting habitat and water quality through sediment and ash runoff.** High risk due to Grampians National Park location. Climate change likely to increase bushfire risk. **Carp** increasing instream turbidity and impacting aquatic plants and native fish. **Water supply channel maintenance.**				Management Plan.
	Burnt Creek **Mount William Creek** **Mount Cole Creek**	Viable and self-sustaining breeding populations of river blackfish are established in	**Themes:** • Rivers and streams **Local areas:** • Horsham	**At risk of extinction in the Wimmera region.** Once widespread, the MacKenzie River and Fyans Creek support the	**Lack of dispersal opportunities** from the MacKenzie River population. **Habitat quality and**	**Water for the environment.** **Translocate river blackfish** from the Mount Zero Channel into the Burnt Creek and other suitable locations. **Research** - potential release sites for captive-bred river blackfish.	Wimmera CMA Barengi Gadjin Land Council Victorian Fisheries Authority Native Fish Australia –	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience	Wimmera Native Fish Management Plan (2022). Victorian Fisheries Authority-Freshwater Fisheries

	Glenlofty Creek **Wimmera River** **Wetlands with suitable habitat**	waterways with suitable habitat.	• Upper catchment	only remaining river blackfish population, with unverified anecdotal sightings elsewhere. **Actions will benefit other small-bodied native fish** including southern pygmy-perch and obscure galaxias. **Large pools with suitable habitat.** **High cultural significance** for First Nations People. **High social value** for the local and regional community.	**connectivity** are patchy. **Altered flow regimes due to water regulation and extraction**. **Climate change and drought** contributing to reduced rainfall, runoff, stream flows and availability of water for the environment. **Carp** increasing instream turbidity and impacting aquatic plants and native fish. **Predatory pressure** from exotic redfin and introduced trout. **Water supply channel maintenance.**	**Release captive-bred river blackfish into suitable habitat**, guided by research. **Research -** habitat enhancement that supports river blackfish. **Enhance habitat**, guided by research findings. **Monitor river blackfish survival and recruitment** at release sites. **During dry periods, translocate fish** from stressed and drying pools to more secure sites with suitable habitat. **Control carp** to reduce impacts on river blackfish.	Wimmera branch Arthur Rylah Institute GWMWater Victorian Environmental Water Holder Parks Victoria Regional DEECA (public lands staff)	are improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained.	Management Plan (2018-2028). Annual Wimmera Seasonal Watering Plans. Dry Contingency Inflow Plans. Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks (2025). Wimmera Carp Management Plan.

Priority species – Freshwater crayfish

Priority species	Priority areas	What will success look like?	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Freshwater crayfish, including: • **Western swamp crayfish (*Gramastacus insolitus*)** • **Glenelg spiny crayfish (*Euastacus bispinosus*).**	**MacKenzie River and Burnt Creek** **Mount William Creek and tributaries** **Upper Wimmera River and tributaries**	Freshwater crayfish locations, population size, and habitat requirements in the Wimmera are known. Feasible future actions and locations for freshwater crayfish are identified.	**Themes:** • Rivers and streams **Local areas:** • Horsham • Upper catchment	**High cultural significance for First Nations People -** identified as a priority by Barengi Gadjin Land Council. **Glenelg spiny crayfish conservation status:** • **Endangered nationally** under the *Environment Protection and Biodiversity Conservation Act 1999.* • **Endangered in Victoria** under the *Flora and Fauna Guarantee Act 1988.* **Western swamp crayfish conservation status:** • **Endangered in Victoria** under the	**Altered flow regimes due to water regulation and extraction**. **Climate change** contributing to increased: • **Storm intensity and frequency and flooding**, increasing erosion risk and impacting habitat condition and mortality. • **Drought frequency and length,** leading to reduced flows, habitat changes and risk of mortality. • **Water temperature** and risk of mortality. • **Bushfire risk**, resulting in mortality and habitat degradation, particularly in upper	**Research - Improve understanding of freshwater crayfish** populations in the Wimmera by assessing distribution, abundance and species composition. If required following this research: • Evaluate the feasibility and benefit of management actions. • Identify and prioritise locations and actions for population recovery.	Barengi Gadjin Land Council Wimmera CMA Research institutions	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience are improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained.	Action statement – *Flora and Fauna Guarantee Act 1988* – Western Swamp Cray (*Gramastacus insolitus*) (2025). Action statement – *Flora and Fauna Guarantee Act 1988* – Glenelg Spiny Crayfish (*Euastacus bispinosus*) (2023). Wimmera Native Fish Management Plan (2022). Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks (2025).

				Flora and Fauna Guarantee Act 1988.	catchment waterways in the Grampians National Park and Pyrenees ranges. **Bushfire** impacting habitat and water quality through sediment and ash runoff. **Habitat degradation**, clearing or access by stock and deer. **Carp and other introduced fish** increasing instream turbidity, predating, competing and impacting aquatic plants and fauna.				Wimmera Carp Management Plan.

Priority species – Freshwater mussels

Priority species	Priority areas	What will success look like?	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Freshwater mussels *(Velesunio ambiguus)* Also known as Floodplain mussels.	**Wimmera River and tributaries** **MacKenzie River, Burnt and Bungalally Creeks**	**Freshwater mussel locations, population size, and habitat requirements** in the Wimmera are known. **Feasible future actions and locations for freshwater mussels are identified.**	**Themes:** • Rivers and streams **Local areas:** • Horsham • Hindmarsh • Upper catchment	**High cultural significance for First Nations People -** identified as a priority by Barengi Gadjin Land Council. **Natural filter to improve water quality.** **Food source for fish and other animals.**	**Extended drying out of habitat, particularly during warmer temperatures.** **Altered flow regimes due to water regulation and extraction**. **Climate change** contributing to increased: • **Storm intensity and frequency and flooding**, increasing erosion risk and impacting habitat condition and mortality. • **Drought frequency and length,** leading to reduced flows, habitat changes and risk of mortality. • **Water temperature** and risk of mortality. • **Bushfire risk**, resulting in mortality and habitat degradation,	**Research - Improve understanding of freshwater mussel** populations in the Wimmera by assessing distribution, abundance and species composition. If required following this research: • Evaluate the feasibility and benefit of management actions. • Identify and prioritise locations and actions for population recovery. **Investigate options for protecting freshwater mussels in Mount Zero channel**, at risk of mortality from channel maintenance activities.	Barengi Gadjin Land Council Wimmera CMA GWMWater Research institutions	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience are improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained.	Wimmera Native Fish Management Plan (2022). Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks (2025). Wimmera Carp Management Plan.

					particularly in upper catchment waterways in the Grampians National Park and Pyrenees ranges. **Bushfire** impacting habitat and water quality through sediment and ash runoff. **Habitat degradation**, clearing or access by stock and deer. **Carp and other introduced fish** increasing instream turbidity, predating, competing and impacting aquatic plants and fauna. **Water quality**, including salinity and nutrients.				

Priority species – Waterbirds

Priority species	Priority areas	What will success look like?	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Waterbirds Birds that rely on aquatic environments, including rivers, streams and wetlands for habitat, including fresh water, saline and brackish habitat.	**Wimmera River** **Lake Hindmarsh** **Lake Albacutya** **Dock Lake** **Wimmera Mallee Pipeline wetlands**	**Management of water for the environment achieves the intended waterbird habitat and population outcomes identified in the Environmental Water Management Plans for the Wimmera River, Yarriambiack Creek and terminal lakes and Wimmera Mallee Pipeline Wetlands.**	**Themes:** • Rivers and streams **Local areas:** • Horsham • Hindmarsh • Upper catchment	**Threatened species**, including Australasian bittern, brolga, freckled duck, blue-billed duck and Australasian shoveler. **International migratory species**, protected under *Japan-Australia Migratory Bird Agreement*, *China-Australia Migratory Bird Agreement,* and *Republic of Korea-Australia Migratory Bird Agreement*. Examples include red-necked stints (*Calidris ruficollis*) and sharp-tailed sandpipers (*Calidris acuminata*). **High concentration and diversity of wetland types**, with birds moving across the landscape to where water is present and waterway conditions are suitable.	**Changes to hydrology** arising from: • **Water regulation and extraction.** • **Climate change and drought** contributing to reduced rainfall and runoff. • **Agricultural land management practices** that retain moisture in paddocks, reducing runoff. • **Drainage alterations**, impacting wetland filling and drying cycles. **Predation by foxes and cats.** **Invasive plants impacting habitat**, particularly bridal creeper.	**Actions included for other MOs will benefit birdlife by providing suitable habitat and reducing threats.** **Actions include:** **Water for the environment.** **Improve nesting, roosting and breeding habitat** by: • **Revegetate riparian land**. • **Control pest plants and animals.** • **Stock exclusion fencing** and grazing management.	Barengi Gadjin Land Council Wimmera CMA GWMWater Victorian Environmental Water Holder Commonwealth Environmental Water Holder Parks Victoria Regional DEECA (public lands staff) Landcare groups Private landholders	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO3 - Waterway condition, connectivity and resilience are improved, providing habitat that supports native species and native communities. LO5 - Waterways with high environmental, social, cultural and economic values are maintained.	Environmental Water Management Plan - MacKenzie River and Burnt and Bungalally Creeks (2025). Environmental Water Management Plan – Wimmera Mallee Pipeline Wetlands – Wimmera CMA Region (2015) Wimmera CMA's bird monitoring reports (various), including Lake Hindmarsh and Dock Lake. Environmental Water Management Plan - Wimmera River, Yarriambiack Creek and their terminal lakes (2025).

				Lake Albacutya supports tens of thousands of waterbirds when flooded, including threatened, migratory and breeding species. **Lakes Hindmarsh supports thousands of waterbirds** when flooded, including threatened, migratory and breeding species. **Natimuk-Douglas chain of lakes is an Important Bird Area,** known to support large numbers and diversity of waterbirds including threatened and migratory species. **High cultural significance for First Nations People**. **High social values** including birdwatching.	**Over-grazing of native vegetation** by rabbits, stock and native herbivores. **Disease** including emerging risks such as avian influenza (H5N1).				

Medium-term outcome 9.

Net rates of streamflow interception from water extraction and storages are stabilising in the Wimmera River catchment.

Outcome statement:

Stabilising the rates of streamflow interception from water extraction and storages in the Wimmera River catchment will reduce additional pressure on already variable water resources. Expanded access to piped water supply from Grampians storages provides an opportunity to reduce landholder reliance on new or enlarged farm dams and reduce harvesting and use of surface rainfall runoff, including from streams, rivers, creeks and catchment dams, supporting more sustainable water use and preventing further increases in overall take from Wimmera waterways.

As a result, waterways will be better able to support ecological processes and the environmental, cultural and community values that depend on them.

What will success look like?

- Slowing or stabilising of the number and volume of farm dams and water storages impacting on rainfall runoff into upper catchment waterways, reducing pressure on flows and supporting healthier waterways.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
Upper Wimmera River and tributaries **Mount William Creek and tributaries**	**Themes:** • Rivers and streams **Local areas:** • Upper catchment	**Adequate flows in waterways**, supporting economic, environmental, social and cultural values in upper catchment waterways and downstream: • **Provides connected habitat supporting aquatic biodiversity**, including native fish, frogs, macroinvertebrates, and aquatic plants. • **Improves water quality**, diluting salinity, nutrients and other pollutants. • **Supports riparian vegetation health**, maintaining bank stability and reducing erosion.	**Reduced river flows** due to water interception and extraction into farm dams and water supply storages. **Dam impact on water flows is exacerbated during dry years** and likely to increase under climate change. **Reduced river flows pose a threat to waterway values,** reducing instream habitat, longitudinal connectivity and the amount of water flowing downstream.	**Investigate the feasibility of trialling incentive programs to encourage decommissioning of farm dams** for environmental purposes. **Support water efficiency programs** such as piped water supply.	Wimmera CMA GWMWater Private landholders Landcare groups	LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO4 - Water is of sufficient quality to support waterway values and uses at important areas for water supply, cultural, environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained.	Waterway Action Plans (various). Victorian Wetland Inventory (2025).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		• **Supports healthier waterways**, thereby supporting connections to Country for First Nations People. • **Supports recreation and amenity**, such as fishing, walking, picnicking and birdwatching. • **Sustains flows to downstream townships and recreational areas and supports tourism.**				LO6 - Wimmera people are active stewards taking action to care for waterways.	

Medium-term outcome 10.

Stewardship increases, with more people taking action to care for waterways.

Means-based outcome.

Outcome statement:

Stewardship of Wimmera waterways will grow, with more landholders, community members and organisations actively involved in caring for rivers, wetlands and their floodplains and catchments. Increased awareness, stronger partnerships and supportive programs will empower people to take practical actions, such as improving land management, protecting riparian areas and contributing to waterway health.

As stewardship increases, a shared sense of responsibility for waterways will be strengthened across the region. This collective effort will lead to sustained improvements in waterway condition, ensuring environmental, cultural and community values are better protected and enhanced over time.

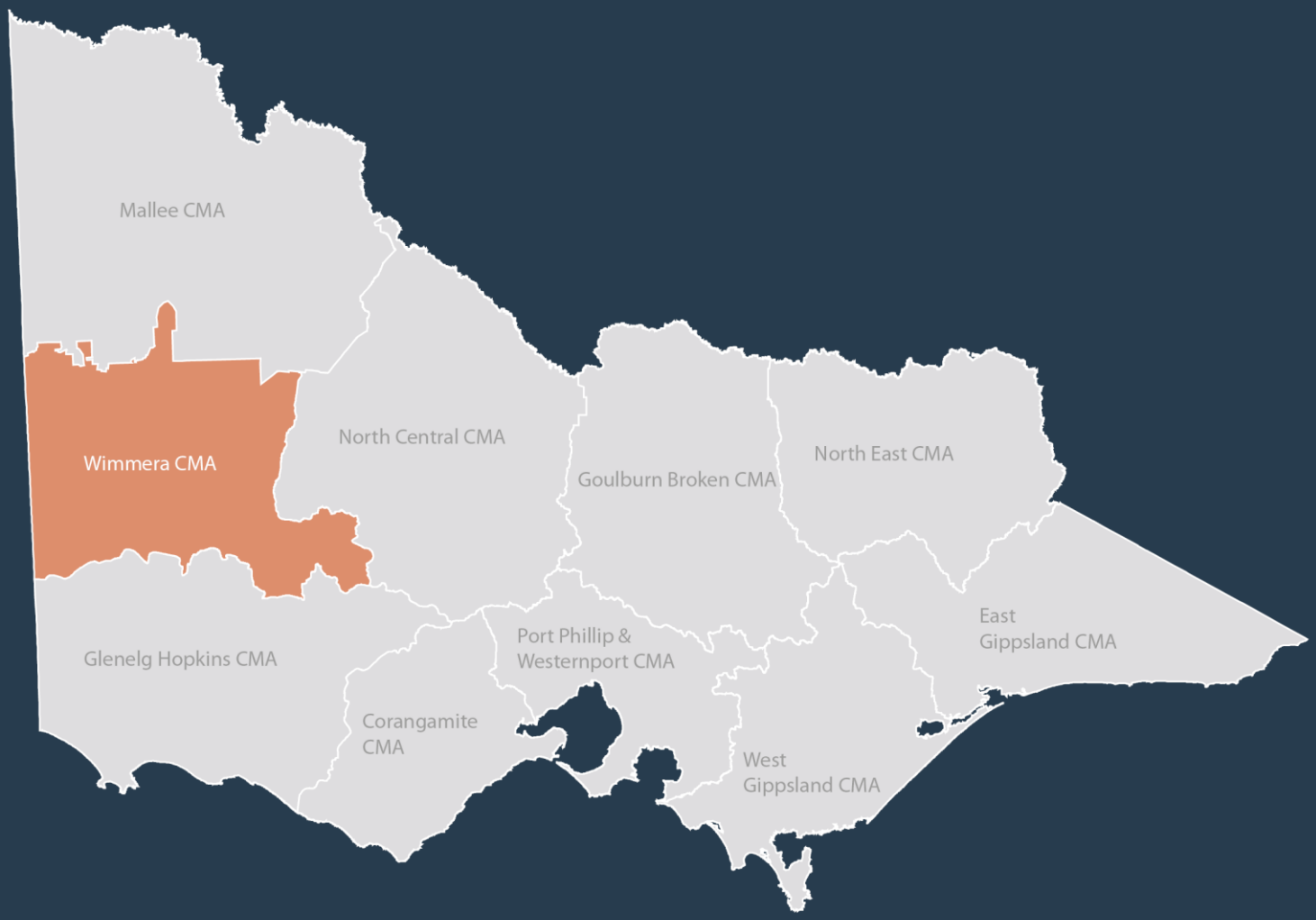
What will success look like?

- Increased participation in CMA and other organisation's waterway enhancement programs, including revegetation events, riparian and wetland incentive programs, and pest plant and animal control.
- More people doing activities to care for waterways on their own properties, with and without support from CMAs and other agencies.
- Maintaining or increasing the number of Landcare groups and members with a focus on waterway health.

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
All Wimmera waterways (means-based outcome)	**Themes:** • Rivers and streams • Wetlands **Local areas:** • Whole catchment	**Cultural values**, with caring for waterways part of caring for Country for First Nations People. **Native species and ecosystems,** including fish, frogs, waterbirds, and riparian vegetation. **Waterways as part of local pride and identity.** **Recreation**, including fishing, camping, walking, rowing,	**Declining community connection** to waterways. **Limited understanding and awareness** of waterway condition and values. **Fewer opportunities to access and connect** with waterways. **Lack of resources** – time, cost and labour required for stewardship actions. **Volunteer fatigue**, arising from declining	**Education and awareness raising** of the value of waterways and conservation management approaches. **Incentives and support** to assist people and groups to care for waterways. **Maintain collaborative partnerships** with community groups. **Engage landholders and community groups** to increase collaboration,	Wimmera CMA Barengi Gadjin Land Council Private landholders Landcare groups and networks, and other community groups Community recreation groups	LO1 - Knowledge and experience of First Nations People is informing waterway planning, management and delivery in the Wimmera, advancing self-determination. LO2 - Values and condition of waterways with formally recognised significance are maintained or improved. LO3 - Waterway condition, connectivity and resilience is improved, providing habitat that supports native species and native communities. LO4 - Water is of sufficient quality to support waterway values and uses at important	Our Catchments Our Communities - Strengthening the Catchment Stewardship Framework in Victoria (2024). Wimmera Landcare and Community Participation Plan (2021).

Priority areas	Themes and Local Areas	Values relevant to the outcome	Threats relevant to the outcome	Management Actions	Parties involved	Primary long-term outcomes contributed to	Documents containing further information and guidance.
		birdwatching, and picnicking. **Amenity values**, with many townships located alongside waterways. **Water quality –** clean and safe water that supports other values.	participation, aging population and competing priorities. **Land use and management pressures**, arising from running profitable agricultural businesses. **Climate change and declining condition** – dry or disconnected waterways reduce visibility of values.	participation and knowledge.		areas for water supply, cultural, environmental and social values. LO5 - Waterways with high environmental, social, cultural and economic values are maintained. LO6 - Wimmera people are active stewards taking action to care for waterways.	

Wimmera CMA is one of 9 CMAs and Melbourne Water working in Victoria under an integrated catchment management approach to achieve sustainability across the state.
Each CMA supports the role that communities and government play in protecting and enhancing local natural environments including waterways.



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