

A large River Red Gum tree stands prominently on the right side of the frame, its trunk and branches illuminated by the warm, golden light of a setting sun. The tree's leaves are a mix of green and brown, suggesting some dryness. In the background, a calm body of water reflects the sky and the surrounding trees. The sky is a deep blue with scattered white clouds, and the overall atmosphere is serene and natural. The foreground is filled with dry leaves and some green grass, indicating a park or natural area.

River Red Gum Parks

Management Plan

July 2018

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This Management Plan is approved for implementation. Its purpose is to direct all aspects of management of the parks and historic areas until the plan is reviewed.
A Draft Management Plan was published in July 2017. All submissions were carefully considered in preparing this approved Management Plan.

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The plan was developed by Parks Victoria's planning team, which includes Josh Chikuse, Neal Ames, Ian Foletta, Linda Greenwood, James Hackel, Maira Brussi and Joe Mumford, and regional and corporate staff.

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Aboriginal and Torres Strait Islander people are advised that this document may contain images, names, quotes and other references to deceased people.

Disclaimer

This plan is prepared without prejudice to any negotiated or litigated outcome of any native title determination applications covering land or waters within the plan's area. It is acknowledged that any future outcomes of native title determination applications may necessitate amendment of this plan; and the implementation of this plan may require further notifications under the procedures in Division 3 of Part 2 of the *Native Title Act 1993* (Cwlth).

The plan is also prepared without prejudice to any future negotiated outcomes between the State or Federal Governments and Victorian Aboriginal communities. It is acknowledged that such negotiated outcomes may necessitate amendment of this plan.

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Approved management plan

The River Red Gum Parks Management Plan is a strategic guide for managing and protecting five national parks and more than 100 other parks and reserves that comprise the planning area in northern Victoria. This plan takes a multi-park approach within a geographic landscape covering over 215 000 ha of parks and reserves.

In developing the plan, Parks Victoria consulted widely with a range of interested community and stakeholder groups and individuals. The contribution of the groups and individuals who attended the community open houses and provided comments is much appreciated.

The plan recognises the vital contributions and participation that Traditional Owners and the community make to park management, and seeks to strengthen Parks Victoria's relationships with community members.

A draft plan was released in June 2017. Over 170 written and online submissions were received covering a wide range of issues. Parks Victoria also consulted with key stakeholders to ensure that future management would protect the area while protecting the community's interests.



Matthew Jackson
Chief Executive Officer,
Parks Victoria

Summary

The River Red Gum Parks Management Plan outlines the management of more than 100 parks and reserves covering more than 215 000 ha along the Murray, Goulburn and Ovens river corridors between Wodonga and the South Australian border. They include Gunbower, Hattah–Kulkyne, Lower Goulburn and Warby–Ovens national parks; part of Murray–Sunset National Park; Leaghur State Park; Gadsen Bend, Kings Billabong, Murray–Kulkyne and Nyah–Vinifera parks; the proposed Murray River Park (see box page 4 and Appendix 1); and Shepparton and Kerang regional parks. This plan does not encompass Barmah National Park and most of Murray–Sunset National Park, which will be covered in a Joint Management Plan and a Mallee Parks Management Plan respectively.

The enjoyment derived from various recreational activities such as swimming, camping, walking, fishing and boating depends in large measure on maintaining and protecting the park and riverine landscape. This plan focuses on protecting and enhancing the outstanding natural and cultural values of the parks and reserves while allowing for recreation and tourism compatible with the protection of those values. It recognises the benefits of a landscape-scale approach for managing water allocations, threatened species, pest plants and animals, fire, recreation and tourism for the parks and reserves.

The aspirations and responsibilities of Traditional Owners and their relationship to Country are key considerations in the management of the River Red Gum Parks. This plan respects the relationships that Traditional Owners and the broader community have with the parks and reserves, and seeks to strengthen these connections through participation in the management of the parks and reserves.

The plan recognises the importance of active and evidence-based adaptive management, and the need to improve our understanding of the parks through shared scientific, cultural and local community knowledge.

Importantly, the plan also adheres to the policy directions provided in the Victorian Government’s response to the Victorian Environmental Assessment Council’s *River Red Gum Forests Investigation, Final Report, July 2008* (VEAC 2008).

The parks and reserves

The parks and reserves protect a large area of Australia’s iconic River Red Gum forests, as well as three internationally significant Ramsar wetlands, many highly significant Aboriginal places, several important post-settlement sites, significant geological features, and a diverse range of flora and fauna, including many threatened species.

The Aboriginal occupation of the region stretches back at least 50 000 years, and continues today. This has created strong living connections between Traditional Owners and the land, wetlands and rivers, and a cultural landscape that provides deep insights into the distant and recent past.



Shield tree, Lindsay Island

Post-settlement occupation has produced a complex cultural landscape modified by agriculture, timber harvesting, stock grazing and river transport. All the River Red Gum Parks have suffered disturbance from these activities to some degree.

The development of river regulation, and irrigation infrastructure such as regulators, canals and levees, have drastically altered stream flows and flooding regimes on the floodplains, resulting in a decline in the health of the River Red Gum forests, streams and wetlands as well as the species that depend on them for their continuing survival.

The River Red Gum Parks are valued for the opportunities they provide for recreation, including camping, water activities, birdwatching, fishing and walking. The appeal of many of the parks and reserves lies in their relative remoteness and undeveloped nature, and in the opportunity to experience riverine and wetland landscapes.

The parks and reserves border other public land, including State forest, conservation reserves outside the planning area, water storages and weirs, and have an extensive interface with neighbouring freehold land used for a range of purposes, including agriculture, settlement and conservation. In the planning area, the southern bank of the Murray River, which is the border between Victoria and New South Wales, is occupied for much of its length by parks and reserves, including the proposed Murray River Park.

Zones are applied to the parks and reserves to show where different management directions and priorities apply. Areas of high conservation value are included in the Conservation Zone.

Meeting legal management requirements

The planning area includes 10 parks managed in accordance with the *National Parks Act 1975* (Vic.), primarily to protect the natural environment, flora, fauna and features of scenic, archaeological, ecological, geological, historic or other scientific interest, and to protect water resources and maintain water quality. Subject to this, the parks are used for enjoyment, recreation, education and research.

The two regional parks, the proposed Murray River Park and more than 100 reserves managed under the *Crown Land (Reserves) Act 1978* (Vic.), *Forests Act 1958* (Vic.) and *Wildlife Act 1975* (Vic.) are managed for a variety of purposes, including conservation and recreation in

accordance with Victorian Environmental Assessment Council (VEAC) recommendations accepted by government. For example, historic reserves are managed to preserve and protect historic heritage, conserve their natural and other features, and provide for a broader range of activities and uses than the national parks.

The Traditional Owners' connection to the land and their roles as custodians of Aboriginal cultural heritage and places are respected. Management of the parks and reserves will be consistent with the requirements of the *Aboriginal Heritage Act 2006* (Vic.) to recognise and protect tangible and intangible Aboriginal heritage.

In addition, legislation such as the *Flora and Fauna Guarantee Act 1988* (Vic.), *Heritage Rivers Act 1992* (Vic.) and *Reference Areas Act 1978* (Vic.) among others provide for protection of a range of values. This legislation is taken into account in this plan.

Strategies for management

The following chapters of this approved plan include goals and strategies for directing the management of the parks and reserves for at least 15 years.

Caring for culture

Traditional Owners will guide the protection of Aboriginal heritage, which will include monitoring and interpreting cultural sites, directing visitors away from sensitive places, improving visitor information and providing tours led by Aboriginal guides. Parks Victoria will investigate the formal use of appropriate Aboriginal or local names for specific features, places, roads and tracks, including an Aboriginal name for Warby–Ovens National Park.

The protection of Aboriginal heritage, which includes ancestral burial sites, is of great importance. The extensive scale and sensitivity of ancestral burials sites distributed across large areas requires significant planning and partnerships with Traditional Owners to ensure all land management activities are undertaken sensitively and in accordance with legislation.

Some visitor practices, such as digging fire pits, and illegal activities, such as off-road trail bike riding, are posing a risk to cultural sites; strategies to alleviate these threats have been developed. Interpretation of cultural sites will be undertaken where Traditional Owners deem it suitable. Traditional Owner land management practices relating to fire and water will be used where possible.

Post-colonial settlement heritage and connections will continue to be recognised and respected, and the understanding of heritage values and places will be enhanced by improved information and interpretation. Where appropriate, compatible uses are permitted. Heritage action statements will be prepared for priority heritage places and areas, and heritage listing will be sought where appropriate.

Parks Victoria will consult with communities where a change to access to places is required, recognising that such changes may have an impact on their connections.

Water for Country

The frequency, timing, duration and depth of flooding are critical for the health of River Red Gum forests and many other ecosystems in the River Red Gum Parks. Management of water flows is challenging, with many competing requirements for water.



Young cormorants in a mature River Red Gum

A number of programs, such as environmental or cultural watering, are underway to restore flow patterns, addressing one of the key threats to the biodiversity and ecological health of water-dependent values of the River Red Gum Parks. Parks Victoria will work with a range of partner agencies and Traditional Owners to achieve improved water management and flooding regimes, particularly where they align with the objectives of this management plan.

Caring for the Environment

While the parks and reserves are characterised by a diversity of natural values, many natural values are under serious threat from changing patterns of water flows and use. If insufficient flooding continues, further deterioration of the expanse and condition of wetlands and forests, already in poor condition, will have long-term impacts on the plant and animal communities and ecosystems, providing little resilience to the future impacts of climate change.

The plan identifies seven priorities to halt the decline of the parks and reserves, build resilience and lead to recovery. In addition to improving water regimes and delivering environmental water, action will be taken where necessary to minimise the impact to ecosystems and other natural values from bushfires, floods and other severe events. This may include targeted planned burning and changes to flooding regimes through the use of regulators and levees.

Invasive plants and animals, including aquatic species, pose serious risks to the parks' natural values. The priorities for management also include reducing grazing pressure from kangaroos, rabbits, pigs, goats, deer and cattle (including eradicating, containing or controlling small or isolated populations); reducing fox predation; and reducing impacts from new and existing aquatic weeds. Partnerships with catchment management authorities (CMAs), other agencies and research organisations will be key to addressing these issues as well as knowledge gaps.

Parks Victoria recognises the benefits of landscape-scale and complementary cross-tenure land management, and will work with public and private land managers, agencies and authorities to improve ecosystem and habitat connectivity and reduce fragmentation.

Invasive plant and animal control will require cooperation with neighbouring landholders and the assistance of volunteer organisations such as friends groups, the Sporting Shooters Association of Australia, VRFish, Australian Deer Association, and Field and Game Australia.

People in Parks

Dispersed camping will continue to be permitted and camping areas will be established in high-use areas to minimise the impact of camping on the environment, cultural values and other visitors. Parks Victoria will investigate establishing campgrounds with bookable campsites. Dispersed camping, however, will remain the predominant type of camping along the Murray River. Facilities will be upgraded at priority camping areas and other key visitor sites where they are currently inadequate. This may include the establishment of camping areas suitable for recreational vehicles (RVs, also known as motor homes) on major touring routes and low-key commercial accommodation, such as safari tents, at key locations.

Because of the risk to public safety and natural values, areas subject to flooding or other hazards may be closed seasonally or temporarily. The location and suitability of access ramps for launching and retrieving boats on the Murray, Goulburn and Ovens rivers will be reviewed. Some ramps may need to be upgraded to provide safe and sustainable access, while others may need to be closed and rehabilitated.

Campfires will continue to be permitted in areas where camping is allowed, subject to fire restrictions and other regulations. To protect Aboriginal cultural values (such as ancestral burial sites) from damage, some areas may be designated as areas where campfires are not permitted or only permitted in fireplaces provided. Firewood collection for campfires will be allowed in specified areas in most parks.

The dumping of household and commercial wastes, as well as littering and toilet wastes around camping areas, are major issues in the River Red Gum Parks. A broad public education program, in combination with increased monitoring and enforcement, will be put in place to address these issues. Parks Victoria will also work with local councils to develop strategies for managing litter and toilet wastes, and will require event managers to provide adequate resources to cope with the volume of wastes generated during events.

Camping with dogs will be allowed in most areas of the proposed Murray River Park, regional parks and some reserves. Dogs must be on lead at all times when not inside a vehicle.

Duck hunting will continue to be permitted in designated reserves during declared open seasons. For safety reasons, declared wetlands may be closed to other visitors during specified times of the day during the declared duck hunting season. Hunters may use gun dogs in these reserves during declared hunting seasons.

Sustainable nature-based tourism experiences around wildlife, life on the river, Aboriginal culture and cultural heritage will be supported to generate opportunities for economic and social benefits to communities, including Traditional Owners.

Exploration and mining may be licensed in parks and reserves other than those managed under the National Parks Act 1975, subject to an assessment of the impacts on biodiversity, heritage and social values. Domestic firewood collection will not be permitted except subject to the designation of firewood collection areas in two regional parks.

Public and private uses to be allowed include communications, water supply and other infrastructure, training activities by the Defence Forces, emergency services, education services and scientific research. Existing private uses in Koondrook Historic Area will continue to be permitted provided they are consistent with the protection of the area's historic and cultural values. Events, commercial tours and commercial filming and photography require a permit issued by Parks Victoria.

Parks Victoria will work closely with the Murray Regional Tourism Board and local councils in the planning and implementation of the proposed Murray River Adventure Trail, which is proposed to extend from Lake Hume to Wentworth. Parks Victoria also supports the RiverConnect initiative of the Greater Shepparton City Council.

Engaging with Country

Understanding and appreciating the River Red Gum environment, culture and history plays an important role in community health and personal wellbeing. Parks Victoria aims to enhance this role by upgrading and delivering interpretation of park stories at key sites in partnership with Traditional Owners, catchment management authorities, local councils, licensed tour operators and volunteer groups.

Face-to-face information and interpretation programs and direct park ranger contact, as well as Junior Ranger and other community-based programs, will be supported by the development of web and mobile apps that encourage self-guided learning and discovery. Schools will be encouraged to make use of the River Red Gum Parks as outdoor learning environments, particularly at Spence Bridge and Darling Junction education areas. Pre-visit information will be made available on Parkweb (www.parkweb.vic.gov.au) and at key regional visitor centres.

The aspirations, values and knowledge of Traditional Owners will be reflected in park management, ensuring that cultural practices continue, connections to healthy Country are strengthened, and community appreciation of the Traditional Owners' rich and diverse cultural heritage is enhanced. Community skills and knowledge will also be incorporated into park planning through engagement programs that feed into operational decision-making. Neighbouring landholders will be encouraged to participate in information exchange to improve cross-tenure land management. Parks Victoria will encourage the formation of new friends groups and other groups to assist with park and reserve management.

Improving our Knowledge

Ecological, cultural and visitor research are fundamentally important for identifying park and reserve values and the threats they face, and understanding how they should be managed and how threats can be mitigated. Ecological research and monitoring that addresses key information gaps and increases the understanding of priority ecological assets and threats will be encouraged and promoted. Key research questions will focus on nine themes: water and flooding; flora, fauna and ecological processes; geology and geomorphology; fire; invasive species; climate change; visitors; Aboriginal heritage; and post-colonisation heritage.

Monitoring and evaluating management is a key step in ensuring the best outcome of programs. Parks Victoria aims to assess outcomes in all programs so that they can be adapted to improve effectiveness and efficiency.

Parks Victoria will maintain partnerships with research institutions and researchers, and will encourage citizen science opportunities in research and monitoring activities in the River Red Gum Parks.

Traditional ecological and cultural knowledge will be identified and applied to support sustainable land management practices. The impact of visitor use on cultural values and assets will be carefully monitored, and action will be taken if historic or cultural features or sites are at risk.



River Red Gum
(*Eucalyptus camaldulensis*)

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Day Visitor Sites:	Echuca
Day Visitor Sites:	Shepparton
Day Visitor Sites:	Tocumwal
Day Visitor Sites:	Yarrawonga

Maps are located at the end of the document.



Banded Stilts (*Cladorhynchus leucocephalus*),
Tutchewop State Game Reserve

1 Overview

Northern Victoria's River Red Gum Parks include a diverse range of species and ecosystems on the floodplains and banks of the Murray, Ovens and Goulburn rivers, extending from the South Australian border to the peaks of the Warby Ranges, near Wangaratta.

1.1 The River Red Gum Parks

The River Red Gum Parks include over 100 parks and reserves managed by Parks Victoria along the Murray, Goulburn and Ovens river corridors, between Wodonga and the South Australian border. The planning area includes 10 parks managed under the *National Parks Act 1975* (Vic.) and over 100 reserves and other areas reserved under the *Crown Land (Reserves) Act 1978* (Vic.), *Forests Act 1958* (Vic.) and *Wildlife Act 1975* (Vic.) (figure 1.1, appendix 1). The parks managed under the National Parks Act 1975 make up the majority of the land covered by this plan. They are:

- **Gunbower National Park** (9330 ha)
Including part of Gunbower Forest, a wetland area listed under the Ramsar Convention.
- **Hattah–Kulkyne National Park** (50 060 ha)
Including Hattah–Kulkyne Lakes, a wetland area listed under the Ramsar Convention, and Kia and Chalka Creek reference areas.
- **Lower Goulburn National Park** (9320 ha)
Including part of the Goulburn Heritage River.
- **Murray–Sunset National Park** (part) (57 472 ha of the total park area of 666 615 ha)
Including Toupnein[†] Creek and Lake Walla Walla reference areas.
- **Warby–Ovens National Park** (14 750 ha)
Including most of the Ovens Heritage River and Killawarra and Warby Range reference areas.
- **Leaghur State Park** (2050 ha)
- **Gadsen Bend Park*** (1623 ha)
- **Kings Billabong Park** (2198 ha)
- **Murray–Kulkyne Park** (4545 ha, including Tarpaulin[†] Bend Reference Area)
- **Nyah–Vinifera Park** (1370 ha)

The three parks below are covered separately by the Crown Land Reserve Act:

- **Kerang Regional Park** (364 ha)
- **Shepparton Regional Park** (2798 ha)
- **Murray River Park** (approximately 37 000 ha as proposed).

* Gadsen Bend takes its name from a prominent farming family named Gadsden. The name was rendered as Gadsen in VEAC (2008) and other sources, resulting in this spelling being adopted in legislation. Parks Victoria is obliged to use the legislated name.

[†] A corruption of Tapalin, the name of a former pastoral holding on the New South Wales side of the bend.

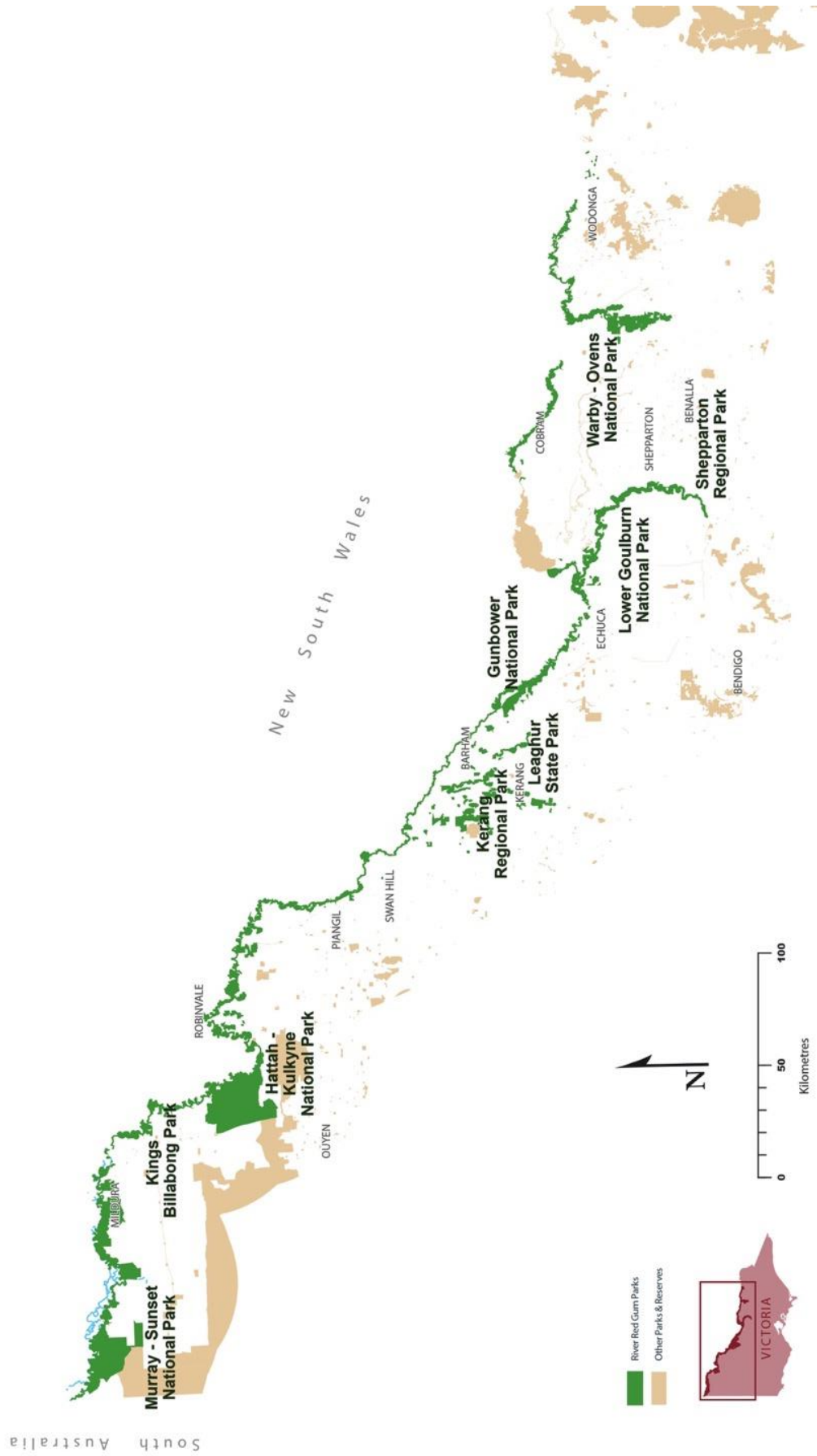


Figure 1.1: Overview map of the planning area.

The rest of the planning area consists of the proposed Murray River Park (see box: The proposed Murray River Park and appendix 1), Shepparton and Kerang regional parks, 19 nature conservation reserves, 41 bushland reserves, two education areas, five streamside reserves, 25 state game reserves, three historic areas and reserves, and an area of unclassified land.

The parks managed under the National Parks Act 1975 are managed to preserve and protect the natural environment, flora and fauna, features of scenic, archaeological, ecological, geological, historic or other scientific interest; to protect water resources and maintain water quality; and for the study of ecology, geology and other sciences. These parks will be used for enjoyment, recreation, education and appropriate study related to conservation of the natural environment of the parks.

The reserves under the Crown Land (Reserves) Act 1978 and Wildlife Act 1975 will continue to be managed under those Acts (appendix 1) and in accordance with their intended use as agreed by government.

Reference areas and other legislated areas, including heritage rivers, are reflected in zoning and overlays (table 3.1 and maps 2–13).

The main feature of the River Red Gum landscape is the floodplains of the Murray, Ovens and Goulburn rivers. The landscape is a narrow, more or less linear area that includes the Murray River floodplains and the lower reaches of tributary rivers with similar riverine landscapes, and extends to the granitic hills and peaks of the Warby Ranges.

The aspirations of the several Traditional Owner groups are key considerations for the management of the planning area. This plan respects and recognises the relationships of the Traditional Owners and the broader communities with the River Red Gum Parks, and seeks to strengthen these connections (sections 1.2 and 4.1).

Parks Victoria's management approach for all Victoria's parks and reserves sits within the context of State and Commonwealth legislation, international treaties, broader government public and private land policies and plans, best practice principles, strategies and guidelines. This management plan adopts the *Healthy Parks Healthy People* philosophy, which reinforces and encourages connections between a healthy environment and a healthy society. It encourages those from the health, environment, parks, tourism, recreation, community development and education sectors to work together to provide a better outcome for all.

The plan also adopts a landscape approach, acknowledging that the planning area must be considered in the context of adjacent public and private land. This approach is fundamental to achieving the vision for the parks and will help maintain ecological processes and ecosystem services. The International Union for Conservation of Nature (IUCN) identifies this type of approach as best practice.

The alignment with broader State and Commonwealth strategies for the use, management and conservation of land and water (such as regional catchment strategies), and with coordinating programs with other agencies and the community, is particularly important in managing the River Red Gum Parks. The approved management plan will link directly to annual programs and evaluation and reporting, such as State of the Parks reports.

The proposed Murray River Park

In April 2005, the Victorian Environmental Assessment Council (VEAC) commenced an investigation into Victoria's River Red Gum forests. The final report, released in July 2008, examined public land from Lake Hume to the South Australian border, including the lower reaches of the Avoca, Loddon, Campaspe, Goulburn, King, Ovens and Kiewa rivers. The report led to the establishment of four new national parks and proposed a Murray River Park be established along the Murray River, extending from Wodonga to west of Mildura. The proposal builds on the Land Conservation Council's 1985 recommendations for the River Murray Reserve.

The proposed park of more than 37 000 hectares consists of a large number of predominantly linear reserves along the Murray River that conserves and protects the many values and uses of public land. The proposed park area includes the River Murray Reserve, adjoining areas of State forest, existing regional parks at Wodonga, Yarrawonga, Cobram, Tocumwal and Echuca, public land water frontages, and small areas of land in various other public land use categories. For planning purposes, the areas are referred to as the proposed Murray River Park throughout the plan.

The land that constitutes the proposed park plays a major role in the overall protection and unification of River Red Gum forests along the Murray River by helping to link the system of parks established in 2010. It provides an important habitat corridor along the Murray River, and contributes greatly to the overall protection of the river and associated River Red Gum forests.

While, at this stage, there are no plans to formally create the park, management proposals in this plan are consistent with the government response to VEAC's recommendations.

Adaptive management is an integral part of the planning approach, enabling ongoing science- and evidence-based decisions. This approach allows for ongoing learning by continually assessing the success of actions in meeting management objectives, and allowing adjustment of future management actions. It is the integration of various components of management to systematically test assumptions, promote learning and continuous improvement, and provide timely information to support management decisions. These logical steps guide the effective implementation, and evaluation enables clearer connections to be made between goals and actions on the ground.

This plan articulates management outcomes for the River Red Gum Parks over 15 years, starting with a vision for the area (chapter 2) and management zoning (chapter 3). Chapters 4 to 9 provide background on a range of management areas, the goals that have been developed for each area, and strategies for achieving those goals. The goals are statements of what management and the community are seeking to achieve for each specific area or aspect of park management.

The plan facilitates sound management that meets statutory obligations, enables the community to take part in decision-making, assists in the resolution of conflicts over uses and activities, and ensures continuity of management. All management activities and programs in the parks and reserves relate to the delivery of a goal or strategy. Hence the plan directs annual park programming and priority setting.

Annual operational planning details specific works or projects, budgets, accountabilities and timelines for completion each year at a regional or district level.

Although this plan has a 15-year timeframe, some goals may be achieved earlier. The delivery of programs, including targeting monitoring against agreed standards, is reviewed and reported as part of routine organisational practice, and progress is also measured against the implementation priorities.

The management plan may be amended if needed. For example, it might be necessary to manage or use the parks differently because of unexpected circumstances, because of issues not covered in the plan that become significant, or because circumstances such as fires, floods or climate change, or changes in visitor use, may require a change in management approaches or goals.

Proposed amendments to the plan will be subject to public consultation and, when approved, shown on the plan available on Parks Victoria's website.

About one-third of the planning area is the subject of existing management plans. The remaining areas are relatively new parks or reserves, or smaller areas for which management plans have not been prepared. The approved management plan will replace the following existing and plans:

- Warby Ranges State Park Management Plan (Parks Victoria 1998a)
- Management Plan for Warby Ranges State Park (Parks Victoria 2006)
- Leaghur State Park Management Plan (Parks Victoria 1998b)
- Kings Billabong Wildlife Reserve Management Plan (Parks Victoria 2008)

The approved management plan will also replace the relevant parts within the planning area of Mallee Parks Management Plan (National Parks Service 1996) for Hattah–Kulkyne National Park, Murray–Kulkyne Park, and that part of the Murray–Sunset National Park within the planning area.

Barmah National Park is not within the scope of this plan, however, Barmah Island, which is situated adjacent to the national park is within this scope of the plan. The Yorta Yorta Traditional Owner Land Management Board has been established to develop a joint management plan for this park. Future directions for the Dharnya Centre and 22 ha of surrounding land, which is not part of Barmah National Park, will be resolved outside the River Red Gum Parks planning process. Small areas around Barmah currently covered in Barmah State Park and Barmah State Forest Management Plan (DCE 1992) or Mid Murray Forest Plan and Ulupna Island, Barmah Forest Management Plan 1993 will now be covered by this plan.

Plan evaluation

The majority of strategies recommended in this plan will be implemented through Operations Plans. Activities, and it is important to track the progress of implementation programs i.e. such as reporting that an area is no longer infested with a weed. It is also important to track progress towards achieving the goals for the parks, such as the improvement in the extent of a native vegetation community or the condition of habitat for a threatened species. The

strategies to achieve the goals are identified in chapters 4 to 9. Reporting on the implementation and success of the strategies will demonstrate if the goals for the River Red Gum Parks have been realised.

There is an assumption that management actions to tackle threats lead to an improvement in values, such as the health of River Red Gum forests. However, long-term monitoring of specific values is required to determine whether this assumption is valid (chapter 9).

Careful analysis is required to determine the cause of changes in values and uses; whether they can be attributed to park management or other effects. Given the timeframe of many ecological processes, the measurement of values is commonly undertaken over five to ten years or more, and data is compared with earlier assessments. The evaluation of management effectiveness uses information collected in monitoring programs to inform future management.

Long-term monitoring of specific values is costly. Where possible, Parks Victoria will work collaboratively with other agencies and research organisations to use data from existing monitoring programs that assist with the evaluation of this plan. Alternatives, such as community-based volunteer programs, may be more cost-effective and may also help to develop and share important knowledge and skills.

The following measures relate to the desired outcomes for the parks as a whole, rather than for specific strategies listed throughout this plan. They will generally be reported through the State of the Parks program and in Parks Victoria's annual reports. These measures are expected to be refined and, subject to available funding, further measures may be identified as more information becomes available and techniques improve.

Key measures for park goals

Cultural heritage management

The park goals recognise and respect peoples' connection to cultural heritage and to protect places of significance. The plan aims to ensure that Parks Victoria works with Traditional Owners and community groups, and to capture the condition of state and nationally significant places across all parks and reserves, as follows:

- trends in the Identification and recording of cultural heritage places
- trends in the implementation of cultural heritage monitoring program
- trends in the integration of Traditional Owner knowledge in land and water management
- trends in fire management that supports the preservation and reinvigoration of traditional ecological knowledge.

Water management

The goals are to maintain water-dependent ecosystems and improve ecosystem resilience, particularly in the face of climate change. Measures include:

- trends in waterway and floodplain values — all parks and reserves
- trends in ecological character — Ramsar sites
- trends in meeting hydrological water requirements — all water-dependent parks and reserves
- trends in measures of aquatic health, such as macro-invertebrate communities — all waterway assets.

Management of the natural environment

The goals for the natural environment are to maintain and improve the diversity and condition of ecosystems and habitats and populations of communities and species. Measures include:

- trend in tree recruitment and canopy health — key parks and reserves
- trend in richness and cover of understorey vegetation species — all parks and reserves
- trend in diversity and extent of wetland and aquatic vegetation species — all parks and reserves
- trend in abundance and distribution of native fish species — all parks and reserves
- frequency and scale of successful waterbird breeding events, particularly for colony-nesting species and threatened species — Ramsar sites and key wetlands
- trend in the abundance and distribution of native frog species — all parks and reserves
- distribution and status of key threats to ecosystems, including fox predation; new, existing and aquatic weed invasion; and grazing pressure
- trends in populations of key nationally and state threatened species, such as Regent Parrot, Murray Cod, Silver Perch, Inland Carpet Python, Giant Bullfrog, Broad-shelled Turtle, slender Love-grass, Billabong Daisy and Hairy Darling-pea — key parks and reserves
- trends in the abundance of species important to Traditional Owners, such as native fish, freshwater mussels, waterbirds and turtles — key parks and reserves
- changes in ecosystem resilience, including trends in the proportion of ecosystems within desired tolerable fire intervals and trends in the proportion of ecosystems within desirable range of growth stages — all parks and reserves.

Community partnerships

The goals are to strengthen people's connections and increase community stewardship.

Measures include:

- level of Traditional Owners involvement in park management — all parks and reserves
- level of volunteers and community group participation — all parks and reserves.

Visitors and tourism

The goals are to maintain a range of inspiring visitor experiences while protecting the environment. Measures include:

- number of visits to parks — key parks and reserves
- level of visitor satisfaction — key parks and reserves
- condition of visitor facilities — all parks and key reserves
- the extent and condition of the road and track network — all parks and reserves
- trend in walking track condition — all parks and reserves
- level of participation in education and interpretation programs — key parks and reserves
- level of participation in licensed tour operator tours — key parks and reserves.



Lagoon, Lower Goulburn National Park

1.2 Traditional Owners

The Ngintait, Njeri Njeri, Latje Latje, Wadi Wadi, Wamba Wamba, Tati Tati, Wergaia, Yulupna, Barapa Barapa, Yorta Yorta, Waywurru, Dudoroa, Bangerang and Taungurung are the First Peoples of the rivers and plains of the River Red Gum Parks. These Traditional Owners and Registered Aboriginal Parties are recognised as primary guardians, keepers and knowledge-holders of Aboriginal cultural heritage for various parts of the planning area.

The powers and responsibilities of Registered Aboriginal Parties include evaluating Cultural Heritage Management Plans and approving or refusing them, enforcing compliance with the protection of Aboriginal cultural heritage, and making recommendations in relation to the sensitivity of information on the Victorian Aboriginal Heritage Register.

The Yorta Yorta Nation Aboriginal Corporation (YYNAC) is the Registered Aboriginal Party over an area south of the Murray River, ranging from Cohuna in the west to beyond Wangaratta in the east and south almost to Euroa. This area includes many of the River Red Gum Parks, including Gunbower National Park, Lower Goulburn National Park, Shepparton Regional Park, Warby–Ovens National Park and a large section of the proposed Murray River Park. The Nation's *Whole of Country Plan 2012–2017* (YYNAC 2012) reflects the aspirations and directions for Country, including natural resource management. A cooperative management agreement established in 2004 facilitates greater cooperation between Yorta Yorta people and the State Government in the management of their Country. This agreement applies to designated areas of Crown land in Yorta Yorta Country, including Lower Goulburn National Park, Gemmill Swamp Wildlife Reserve, Loch Garry State Game Reserve and part of the proposed Murray River Park.

Parks Victoria works with Registered Aboriginal Parties and Traditional Owners through its Managing Country Together policy. However, where there is no Registered Aboriginal Party, Parks Victoria is required to consult with Aboriginal Victoria in relation to works in parks and reserves.

In 2010 a Traditional Owner Land Management Agreement was established between the State Government and Yorta Yorta Nation Aboriginal Corporation under the *Traditional Owner Settlement Act 2010* (Vic.), and a Traditional Owner Land Management Board was established for the joint management of Barmah National Park. This park will be covered by a separate joint management plan to be prepared by the Yorta Yorta Traditional Owner Land Management Board. Joint management of the national park does not affect existing access and uses, which will continue to be managed under the National Parks Act 1975.

It is anticipated that joint management may be granted for other River Red Gum Parks in the future as part of possible Traditional Owner Land Management Agreements. However, a future treaty could provide for different management arrangements with the Traditional Owners (See box: How might a treaty influence parks management?).

Parks Victoria's aspirations for managing parks with Traditional Owners

- That Traditional Owners' connections to Country are recognised, respected and supported.
- That Traditional Owners apply their traditional land management practices on their Country, and that the health of the Country is restored, culturally and environmentally.
- That Traditional Owners and Parks Victoria grow together, sharing knowledge and skills as partners, working together to meet present and future challenges of climate change and sustainable management of fire and water, and healing the legacy of inappropriate land and water management practices of the past.
- That Traditional Owners collaborate as leaders and are involved at all levels of management about all aspects of Country and heritage to improve management and prevent harm being done to cultural values.
- That Traditional Owners have the capacity, training and resources to manage Country and to engage effectively with government, other stakeholders and the community.
- That there is a strong reconnection of Traditional Owners with Country and a genuine recognition of this connection within the whole community.
- That Traditional Owners develop businesses and equitable partnerships aimed at creating sustainable economic services to community and visitors, including owning and managing their own facilities on Country.
- That the River Red Gum rivers and plains are owned by the Traditional Owners and managed as parks and reserves for all Australians.

How might a treaty influence park management?

The Victorian Government is committed to advancing self-determination for Aboriginal people across Victoria. Regional and statewide forums were held in 2016 to help define the agenda for self-determination. The idea of a treaty between the Victorian Aboriginal community and the Victorian Government was supported, and an Aboriginal Treaty Interim Working Group was established to provide advice on the process and timing for a treaty, and guidance on community engagement, and to examine options for a permanent Victorian Aboriginal representative body. An interim report from the Working Group was presented in December 2016.

The scope of a treaty has not yet been defined. Some of the possibilities include addressing recognition and reconciliation, self-determination and empowerment, land and resources, and the relationship between Aboriginal people and the State Government. Some of these possibilities are detailed in a *Treaty Fact Sheet*, available from Aboriginal Victoria's website. One of the first steps is to determine how Aboriginal people would like to be represented in any treaty negotiations; this is the current focus of consultations. The government's position is that only the Victorian Aboriginal community can decide who should represent the community or negotiate a treaty on the community's behalf. A *Representative Structures Fact Sheet*, also available from Aboriginal Victoria's website, describes some options for consideration.

A treaty between Victorian Aboriginal people and the Victorian Government would be framed within the constitutional powers of the government. A treaty would take into account any existing arrangements such as those established under the Traditional Owner Settlement Act, which provides an alternative framework for recognition of the rights of Traditional Owners. Agreements under this Act are negotiated directly between the government and Traditional Owner groups, and recognise Traditional Owners' relationships to the land, waters and natural resources.

Agreements are in place with five Traditional Owner groups across Victoria: Yorta Yorta, Gunaikurnai, Dja Dja Wurrung, Gunditjmara and Wotjobaluk. Several other Traditional Owner groups are presently in negotiation with the State Government to establish recognition and settlement agreements that may include Traditional Owner Land Management Agreements, which could expand the number of parks and reserves under joint management.

The most likely consequence of a treaty is a greater role for Aboriginal people in planning, managing and decision-making for the parks within their traditional Country. Joint management is already possible under the Traditional Owner Settlement Act.



1.3 Community input

The management plan for the River Red Gum Parks is based on the final recommendations of the River Red Gum Forests Investigation (VEAC 2008), developed with extensive public consultation. It also draws on information and views provided by a wide range of groups and individuals during preparation of the plan and comments received on the draft plan.

Traditional Owners were consulted individually or collectively through organisations such as Aboriginal corporations and the Murray Lower Darling Rivers Indigenous Nations (MLDRIN).

Parks Victoria Rangers discussed park management issues with park visitors during the 2015–16 summer. Comprehensive community information was made available in February 2016 and generated considerable comment. Community Open House drop-in sessions were conducted in Mildura, Robinvale, Swan Hill, Kerang, Echuca, Shepparton, Wangaratta, Corowa and Melbourne in April 2016. These sessions allowed the community to share their views and find out more about management of the planning area. The drop-in sessions were attended by 166 members of the community.

The draft plan was released in June 2017, Parks Victoria received ninety-seven written submissions and seventy-seven online survey submissions from the community and stakeholders (appendix 3). The submissions commented on many of the proposed directions in the draft plan. The main points raised and the responses are summarised in Table 1.1.



Camping on the Goulburn River at Cobram

Table 1.1: Summary of the main points raised in submissions on the plan.

Issue raised	Response
<p>Roads and tracks</p> <p>Public response supported better track maintenance and improving the condition of tracks. Concern was raised that access be maintained at the current level.</p>	<p>Access will be maintained with a priority to providing safe visitor access and emergency response. Any proposed changes will be discussed with user groups and emergency services, such as CFA, as well local Shires and VicRoads.</p>
<p>Recreational boating</p> <p>There was support for improved access to rivers, including vehicle tracks, ramps and other infrastructure.</p> <p>Some clarification was sought regarding motorised boating on the Goulburn River and Lower Ovens River.</p>	<p>Plan supports better facilities for boating.</p> <p>Motorised boating will continue to be permitted on the Goulburn River and Lower Ovens River, but will be subject to a speed limit to restrict the use of jet skis and wake boats.</p>
<p>Camping</p> <p>To maintain dispersed camping as the predominant style of camping along the Murray River. Some areas, however, are suffering from overcrowding. Some visitors/groups commandeer areas for lengthy periods.</p>	<p>Dispersed Camping will continue with minimal change. Three new camp grounds and eight camping areas to be established in high-use areas. These may include bookable campsites, fees and limits on length of stay to manage demand, and may include provision of facilities.</p>
<p>Campfires</p> <p>A summer campfire ban was discussed in several submissions even though the possibility was not raised in the management plan. There was an even number of submission supporting a ban as those opposing one. Victoria is the only state or territory within Australia that allows campfires during the declared fire danger period.</p>	<p>Campfires will continue to be permitted throughout the fire danger period. NSW regulations, which prohibit campfires, will operate in NSW areas on the southern bank of the Murray River.</p>

continued on next page



Boat ramp, Spences Bridge

Table 1.1: continued

Issue raised	Response
<p>Dogs</p> <p>Visitors to the parks along the Murray River often travel with their domestic dogs. Dogs are not permitted in national parks.</p>	<p>Dogs are permitted in the proposed Murray River Park, historic areas and reserves and regional parks, where they must be on lead and under effective control at all times. Dogs are not permitted in national and state parks or nature conservation reserves, including flora and fauna reserves. Dogs are not permitted in wildlife reserves. Dogs are permitted in designated areas of some state game reserves, and the use of gun dogs is permitted during duck hunting season.</p>
<p>Hunting</p> <p>Hunting at Merbein Common was recognised as an issue. The proposed resolution through hunter education was opposed as neither suitable nor viable.</p>	<p>A more detailed investigation is being undertaken by DELWP. An outcome of the investigation is expected late 2018.</p>
<p>Toilets</p> <p>All submissions on this topic criticised the plan for failing to deal with the issue of toileting in Murray River camping areas and the disposal of toilet waste.</p>	<p>Investigate the value of providing toilet facilities at locations where high use has been identified and where the impact of human waste is having a detrimental impact on the environment.</p>
<p>Visitor waste</p> <p>There was a strong feeling that the ‘carry in carry out’ approach to waste was not working.</p>	<p>Continue to implement and promote Parks Victoria’s ‘carry in, carry out’ approach to litter management and work with local councils and waste management groups to develop strategies for managing litter.</p>
<p>Tourism</p> <p>The Murray River Adventure Trail and an RV trail along the Murray River were well received.</p>	<p>Both initiatives are supported.</p>



Satellite view of the planning area in the 2011 flooding season

1.4 The parks and their regional context

The River Red Gum Parks include more than 215 000 ha of land in ten existing national parks and other parks, and 100 other areas that are reserved, or are intended to be reserved, under the Crown Land (Reserves) Act or Wildlife Act (figure 1.1, appendix 1). The parks and reserves lie mainly along the Murray River between the South Australian border and Lake Hume, a distance of more than 600 km.

Land tenure

Land tenure determines the primary objectives for management. Areas of land reserved under the National Parks Act 1975, including national parks and state parks, are managed primarily for:

- preservation and protection of the natural condition of the parks and their environment
- flora
- fauna
- features of scenic, archaeological, ecological, geological, historic or other scientific interest
- protection of water resources and maintenance of water quality.

Subject to these purposes, parks are for use by the public for enjoyment, recreation and education, with appropriate research activities are also provided for under the Act.

River Red Gum areas reserved under the Crown Land (Reserves) Act will be managed primarily for:

- preservation of areas of ecological significance
- conservation of areas of natural interest or beauty, or of scientific, historic or archaeological interest
- preservation of species of native plants
- propagation or management of wildlife or the preservation of wildlife habitat
- public recreation, including areas for camping.

River Red Gum areas reserved under the Wildlife Act will be managed primarily for protecting and conserving wildlife.

Regional context

The planning area incorporates more than 100 parks and reserves covering more than 215 000 ha along the Murray, Goulburn and Ovens river corridors between Wodonga and the South Australian border. Because of the size of the planning area it needs to be considered within a broad regional context. There are a large number of different land owners and land managers, both of parks estate and land bordering parks estate. In addition, a number of NSW state agencies also have jurisdiction over the Murray River and other parks along the Vic/NSW border. The extend of the parks is the NSW/Vic border situated at the top of the southern bank (excluding the Murray River).

Large sections of State forest adjoining some River Red Gum Parks are managed and regulated by the Department of Environment, Land, Water and Planning (DELWP) for a variety of purposes, including flora and fauna conservation, water catchment and water supply protection, landscape protection, archaeological and historic values protection, recreation and education.

Many of the River Red Gum Parks also border other public land, including water storages, and have an extensive interface with neighbouring freehold land used for various purposes, including agriculture, townships and tourism. Much of the planning area has absolute frontage on the south bank of the Murray River, which is the boundary between Victoria and New South Wales. The waters of the river are subject to Acts and regulations administered by the State of New South Wales.

The portion of Murray–Sunset National Park included in the planning area adjoins Neds Corner, a former cattle grazing property that is now owned and managed for nature conservation by Trust for Nature.

The parks are within ten local government areas: the rural cities of Mildura, Swan Hill and Wangaratta; the shires of Gannawarra, Loddon, Campaspe, Moira and Indigo; and the cities of Greater Shepparton and Wodonga. They are within a short distance of many rural centres, including Mildura, Robinvale, Swan Hill, Kerang, Cohuna, Echuca, Cobram, Shepparton, Yarrawonga, Wangaratta and Wodonga in Victoria, and Wentworth, Balranald, Deniliquin, Moama and Albury in New South Wales.

Parks make a significant state and regional economic contribution through ecosystem services, such as water, and through tourism, employment and other uses. Tourism is the second-largest employment sector in the region, contributing an estimated \$1.9 billion to the local economy and employing about 18 400 people (DEDJTR 2015).

The River Red Gum Parks are influenced by the activities of the Mallee, North Central, Goulburn Broken and North East CMAs. CMAs are responsible for the integrated planning and coordination of land, water, and biodiversity management. Regional catchment strategies ensure the protection and sustainable use of land, vegetation and water resources within regions covered by the planning area.

The River Red Gum Parks are also influenced by adjoining land uses, and have been shaped by a range of past uses.

A regional thematic framework developed by Context (2014) has been adapted for this plan to the Victorian Framework of Historic Themes to highlight the historical themes that have helped shape the distinctive landscapes of the River Red Gum Parks (chapter 4).



Common Nardoo
(*Marsilea drummondii*)

1.5 Significance of the River Red Gum Parks

The River Red Gum forests of south-eastern Australia are among the most iconic landscapes in Australia. They are recognised for their cultural significance to Aboriginal people, their ecological importance (especially as habitat for birds and other animals), and their role in regulating the flow of water on the floodplain of the Murray River. They are also strongly valued for the opportunities they provide for recreational activities such as camping and water-based activities such as fishing.

Hattah–Kulkyne National Park was reserved in 1960 and is the oldest national park in the region. Murray–Sunset National Park was reserved in 1991 and Leaghur State Park in 1992. Gunbower, Lower Goulburn and Warby–Ovens national parks were established in 2010. Kings Billabong Park was established as a Wildlife Reserve in 1999 and was further classified as a Nature Conservation Reserve in 2001.

Twenty nature conservation reserves in the planning area are assigned to Category 1a (Strict Nature Reserve) in the IUCN’s List of National Parks and Protected Areas (appendix 1). Category 1a areas are managed mainly for science. Murray–Sunset, Hattah–Kulkyne, Gunbower, Lower Goulburn and Warby–Ovens National Parks, Leaghur State Park, Gadsen Bend Park, Kings Billabong Park and Nyah–Vinifera Park are assigned to Category II (National Park). Category II areas are managed primarily for ecosystem conservation and recreation. Murray–Kulkyne Park is assigned to Category III (Natural Monument). Category III areas are managed for the conservation of particular natural features. Twenty-six state game reserves reserved under the Crown Land (Reserves) Act are assigned to Category VI and managed under the Wildlife Act, which provides for hunting and the preservation of wildlife habitat. Current IUCN categories for other reserves in the planning area are shown in appendix 1.

Hattah–Kulkyne National Park and Murray–Kulkyne Park were declared a biosphere reserve in 1981 under UNESCO’s Man and the Biosphere program. This program aims to establish a scientific basis for the improvement of relationships between people and their environments.

Three sites within the planning area are listed under the Ramsar Convention for their international importance, as identified within the wider range of values contained within the Ramsar criteria (<https://www.ramsar.org/>) e.g. habitat for migratory birds.

Under the Ramsar Convention there is an obligation to maintain the ecological character of Ramsar sites as at the time of listing. The ecological character for each site is described in accordance with the national framework. The sites are:

- Kerang Wetlands (9419 ha), consisting of Hird Swamp and Stevenson Swamp wildlife reserves and parts of Kerang Regional Park and the Kerang, Johnson Swamp, Cemetery Forest, Little Lake Charm, Cullens Lake and Koorangie wildlife reserves within the planning area, and water supply reserves
- Gunbower Forest (9330 ha), consisting of Gunbower National Park, Spence Bridge Education Area, part of Murray River Park (proposed) within the planning area and other Crown land, including all of Gunbower State Forest, and private land
- Hattah–Kulkyne Lakes (955 ha), consisting of 12 of the 18 lakes in Hattah–Kulkyne National Park.

Gunbower Island, Hattah Lakes, Kings Billabong, Lake Little Charm, Lake Kelly, Stevenson Swamp and the Lower Goulburn River Floodplain are considered nationally important wetlands (DOE 2016).

Natural values

The River Red Gum Parks are critically important for the conservation of a diverse range of flora and fauna. Many of Victoria's rare and threatened species are found in the River Red Gum Parks. These include many migratory bird species that depend on the specialised wetland ecosystems throughout the River Red Gum Parks.

A key feature is the extent of the River Red Gum forests and the diversity of the other vegetation communities, from the Box–Ironbark forests of the eastern hills to the permanent, intermittent or episodic freshwater wetlands of the floodplain and saline wetlands of the far north-west.

Two key natural ecosystems are recognised in the planning area: Dry Forests and Woodlands, and Inland Waters and Wetlands. These are further classified into ten sub-ecosystems, one of which (Riverine Forest and Woodland) is the dominant sub-ecosystem of the planning area (table 6.1).

The planning area, as part of the Murray–Darling Basin, has geomorphology of national significance (section 6.3). Hattah Lakes are the largest overflow lake system of national geological significance on the Murray River. The Ovens River Heritage River remains the only substantial, essentially unregulated Victorian tributary of the Murray River. The broad area of River Red Gum forest contains four other geological sites of national significance and 16 sites that are important at a state level (VEAC 2008). Some of these sites are on private freehold land or on public land that is not in the planning area.

The proposed Murray River Park forms one of the major links in a chain of forest along the Murray River that extends for a distance of more than 600 km. The park will provide for improved management, enhancing habitat connectivity for the Red Gum forests along the river.



Shearing shed,
Berribee Homestead

Cultural heritage significance

Aboriginal occupation of the Murray River Basin extends back at least 50 000 years. Ancestral burial sites, ceremonial sites, scar trees, shell middens and other features and sites all attest to this ancient occupation. The Traditional Owners of land in the River Red Gum Parks have a rich culture that is embodied in Country, which includes the land, water, environment, languages, oral histories, practices and stories. Traditional learning and teaching is still practised and this heritage continues for Aboriginal people today and can be shared with all Australians. Many Aboriginal place names have survived, and many more can be found on early maps (for example, Hiscocks 1874).

Many significant areas and places in the planning area are associated with the early European exploration and settlement of the area, as well as later river transport, irrigation agriculture and other activities.

Recreation and nature-based tourism benefits

The River Red Gum Parks offer unique settings and year-round opportunities for outdoor adventure, commonly themed around the rivers and wetlands. The parks play an important role in creating a healthy environment that helps to fulfil people's cultural, physical and spiritual needs. They are a favourite year-round destination for people seeking remote recreational experiences, particularly during holiday periods.

A wide variety of recreation activities are undertaken, ranging from camping, boating and fishing to game hunting and road touring. Roads and tracks passing through River Red Gum Parks form a major part of the River Red Gum Drive, one of Victoria's iconic four wheel drive adventures. Local tour operators offer a variety of guided or organised recreation activities in the planning area. Duck hunting is also a popular activity in some of the parks and reserves during open seasons.



Hattah Lakes in flood

The River Red Gum Parks also have social value because of their special significance to a particular community or group. Many communities around the planning area have strong historical links to river transport, irrigation agriculture, grazing and forestry, or long associations with the parks through visitor activities.

Ecosystem services and economic benefits

Ecosystem services are the tangible benefits that people receive from nature. The ecosystem services derived from the parks include:

- provisioning services, such as the supply of clean water
- regulating services, such as flood and drought regulation and maintaining liveable climates
- supporting services, such as air and water purification, nutrient cycling, absorbing and storing carbon and preventing soil erosion
- cultural services, such as the fulfilment of spiritual, educational and recreation needs
- biodiversity services, such as the vast gene pool as a resource for research into medical, industrial and agricultural and other applications.

The extensive wetlands and stream systems in the planning area provide quality water that is vital for agricultural, industrial and domestic use, as well as for maintaining the ecological integrity of the ecosystems.

The River Red Gum Parks also support the local and wider economy. They make a significant contribution to recreation expenditure (DPI 2014) and provide indirect economic benefits to the businesses that support those industries. They also provide direct employment in park management and operation. In addition, parks provide improved community health and wellbeing from participation in recreation activities in parks.



View from Warepil Lookout,
Hattah–Kulkyne National Park

2 Vision

The vision describes the intended outcome of management and the future state of the River Red Gum Parks.

Northern Victoria's River Red Gum Parks include a diverse range of species and ecosystems on the floodplains and banks of the Murray, Ovens and Goulburn rivers, extending to the granitic hills and peaks of the Warby Ranges.

The Traditional Owners have lived on and managed these areas for thousands of years and continue to be involved in all aspects of land, water and visitor management; this Country is an integral part of their lives and communities. Cultural heritage is recognised, respected and protected. There are also strong connections to the River Red Gum Parks through the history of settlement, grazing and timber cutting. The community continues to be connected to and shape the landscape.

Water flowing in the rivers, across the floodplains and through the lakes and wetlands is key to the health of flood-dependent River Red Gum ecosystems. Environmental and cultural flows, restored and delivered in cooperation with catchment management authorities, Traditional Owners and other partners, maintain and improve the health of the parks, and the vegetation communities and fauna they support.

The Red Gum forests, woodlands, wetlands and waterways are recovering from decades of insufficient flooding and severe stress. The health of the ecosystems and communities is improved, with populations of threatened, flood-dependent and other species maintained and made more resilient to climate change. Targeted, effective and integrated programs and collaborative partnerships are reducing the impacts from feral animals, weeds and other threats. Scientific and Traditional Owner knowledge and involvement is improving environmental and fire management.

The rivers and parks continue to draw people looking for a bush camping experience where they can fish and relax beside the rivers and lakes or enjoy the Warby Ranges and other off-river areas. Many return year after year, with successive generations building deeper connections to the rivers and parks. Local communities value the economic benefits from visitors exploring their special areas.

Awareness of the parks' values is growing through education, information and community involvement, increasing the community's connection and enjoyment and building deeper respect for the parks. Healthy Parks Healthy People programs contribute to the overall wellbeing of the community. Visitors come to learn about the area's wealth of cultural values, especially learning about Aboriginal life and cultural practices from Traditional Owners.

Our understanding of the parks and reserves is growing as scientific and traditional knowledge is gathered and used to improve park management.



Goulburn River,
Shepparton Regional Park

3 Zoning

Management reflects the unique landscape of the parks through consistent reservation, regulation and zoning.

Park management zoning is used to define areas of the River Red Gum Parks where different management priorities apply. Overlays have also been developed to provide additional management direction for particular requirements or activities. In the River Red Gum Parks, the reference area zones and heritage river overlays are established by legislation and dictate the scope of the management plan. These and other zones and overlays and their management purposes are outlined below and shown in maps 2–13. Chapter 7 sets out the activities to be permitted in each park or reserve.

Many other areas have additional protection through legislative means, such as species and communities listed under the *Flora and Fauna Guarantee Act 1988* (Vic.), *Environment Protection and Biodiversity Conservation 1999 Act* (EPBC) for Ramsar sites and special water supply catchment areas declared under Schedule Five of the *Catchment and Land Protection Act 1994* (Vic.). These have not been mapped or zoned, but will be managed in accordance with the relevant legislation and regulations.

A number of small localised areas are managed for permitted uses, such as pipelines, powerlines, telecommunication towers, apiculture sites and park depots. These areas are managed in accordance with licences, leases and other legislative means.

3.1 Zones

Conservation Zone

- Areas of high conservation value defined through conservation action planning (Parks Victoria 2017a), including sensitive ecological communities, habitat for threatened and rare species and other important environmental attributes, where a very strong management emphasis is on protection of the environment.

Recreation and nature-based tourism are permitted subject to close management to minimise the impact on park and reserve values and natural processes. They usually involve low-key, dispersed recreation with basic facilities.

Conservation and Recreation Zone

- Areas where the management emphasis is on protecting environmental and cultural values while allowing for low-impact recreation.

Dispersed recreation and nature-based tourism activities are encouraged. The level of activities and the small-scale recreation facilities provided do not have a significant impact on natural processes.

Reference Area Zone

- Areas proclaimed under the *Reference Areas Act 1978* (Vic.).

Reference areas are areas where human interference is minimised so that, as far as practicable, the only long-term change results from natural processes. No access is permitted except that associated with protecting natural processes, emergency operations and approved research. They may then be used for comparative studies against land where human interaction and activities happen, showing the effects of human utilisation of land. There are seven reference areas in the River Red Gum Parks: Toupnein Creek and Lake Walla Walla (Murray–Sunset National Park), Tarpaulin Bend (Murray–Kulkyne Park), Chalka Creek and Kia (Hattah–Kulkyne National Park), and Killawarra and Warby Range (Warby–Ovens National Park).

Education Zone

- Small areas in a relatively undisturbed area as recommended by the Victorian Environment Assessment Council and accepted by government as education areas.

These areas are available for environmental and cultural education activities. There are two education zones in the River Red Gum Parks: Darling Junction and Spence Bridge education areas.

Table 3.1: Summary of planning area zoning for parks in the planning area.

Reserve	Conservation	Conservation & Recreation	Reference Area	Education Zone/Area
Murray–Sunset NP (part)	✓	✓	✓	✗
Hattah–Kulkyne NP	✓	✓	✓	✗
Murray River Park	✓	✓	✗	✗
Warby–Ovens NP	✓	✓	✓	✗
Gunbower NP	✓	✓	✗	✗
Lower Goulburn NP	✓	✓	✗	✗
Murray–Kulkyne Park	✓	✓	✓	✗
Shepparton RP	✓	✓	✗	✗
Kings Billabong Park	✓	✓	✗	✗
Leaghur SP	✓	✓	✗	✗
Gadsen Bend Park	✓	✓	✗	✗
Nyah–Vinifera Park	✓	✓	✗	✗
Spence Bridge EA	✗	✗	✗	✓
Darling Junction EA	✗	✗	✗	✓
Other reserves	✓	✓	✗	✗



Heywood Lake Wildlife Reserve

3.2 Overlays

Overlays are used to define areas where specified activities or values require special management. There are two types of overlays in the River Red Gum Parks.

Visitor Experience Area (VEA) are management overlays and apply to areas that are popular for a range of specific visitor activities, from remote hiking and camping to highly developed areas catering for large numbers of visitors. They provide a management focus for ensuring that the visitor experience can continue without damaging underlying environmental and cultural values. These are a priority for visitor management programs and actions to protect their unique settings which support a range of defined visitor experiences. (table 7.1 and maps 2–13).

Heritage Rivers are legislated overlays and are proclaimed under Schedule One of the *Heritage Rivers Act 1992* (Vic.) and are managed to protect their significant nature conservation, recreation, scenic and cultural heritage values, to maintain or improve water quality, and to retain unimpeded river corridors without any new water diversions. The heritage river overlays in the River Red Gum Parks are parts of Goulburn Heritage River in Lower Goulburn National Park, Shepparton Regional Park and Arcadia Streamside Reserve, and Ovens River Heritage River in Warby–Ovens National Park (maps 8, 9, 12, 13).



Canoe scar tree,
River Red Gum Parks

4 Caring for Culture

The Traditional Owners have lived on and managed these areas for thousands of years and continue to be involved in all aspects of land, water and visitor management; this Country is an integral part of their lives and communities. Cultural heritage is recognised, respected and protected. There are also strong connections to the River Red Gum Parks through the history of settlement, grazing and timber cutting. The community continues to be connected to and shape the landscape.

The River Red Gum Parks have a long and rich cultural history, extending over at least 50 000 years. A strong connection and respect for Country, which included sustainable use of the native flora and fauna, augmented where necessary by land management activities such as ‘fire stick farming’, is a fundamental aspect of Aboriginal culture that has shaped the landscape and its biodiversity. The resources along the Murray and its tributaries also attracted and sustained post-colonial settlement, which began less than 200 years ago. This introduced agriculture, timber harvesting, stock grazing, water extraction, river trade and tourism, each leaving their own legacy upon the landscape.

The result is a complex cultural landscape that provides a range of insights into the past and the connections between people and the land. For many visitors, cultural heritage is a key experience of the River Red Gum Parks. Aboriginal cultural heritage has the potential to be the richest experience.

4.1 Aboriginal heritage

Aboriginal people have lived continuously on the plains of the Murray–Darling Basin for tens of thousands of years. The Murray River landscape is believed to have been the most populated area occupied by Aboriginal people in Australia before the arrival of Europeans, because of the rich resources of the river and surrounding areas (TRC 2013).

Water has been a constant theme in Aboriginal life in the Murray River valley. The resources of the river and the surrounding floodplains were critical for sustaining populations during periods of flood and drought. Long-term patterns of Aboriginal occupation and use reflect the changing landscape and its resources over thousands of years.

Constructed earthen mounds formed islands during floods, providing bases for camps and fishing expeditions and the production of canoes, nets, spears and traps for fishing and hunting. Yorta Yorta man Neil Morris (cited in Context 2014) recounted that:

‘The rich resources of the area provided plentiful sources of materials to satiate the needs of all facets of life — food, to shelter, recreational, to medicinal and ceremonial ... The forest was our home, playground, and tabernacle.’

An early settler, Edward Morey, noted that Aboriginal people lived mainly on fish, and that the forest country swarmed with kangaroos, wallabies, pademelons and other small game. The lakes and lagoons provided fish, crabs, mussels and waterfowl (Morey 1907, cited in Bonhomme 1990).

The dispossession of Aboriginal people after the arrival of Europeans is well documented (VEAC 2006). Aboriginal artist Tommy McRae, who lived near Lake Moodemere in the late 1800s, produced many illustrations of traditional life, and depicted early European and Chinese settlers. Although much knowledge was lost in this period, a large amount of oral history and tradition has survived. Aboriginal people continue to use and harvest the natural resources of the forests and waters and these connections to land, places and cultural knowledge are passed on to new generations with the responsibility to care for Country.

Many landscape features such as rivers, wetlands, lakes and hills as well as particular plants and animals, are culturally significant as totemic features and are a fundamental part of Aboriginal heritage and culture. Many of these traditions and protocols are still observed (VEAC 2006; Atkinson & Berryman 1983).

The *Aboriginal Heritage Act 2006* (Vic.) recognises the protection of Aboriginal cultural heritage as an integral part of land management, and recognises Traditional Owners as the primary guardians of their heritage.

In 2016, the Aboriginal Heritage Act was amended to recognise and protect intangible heritage, which is defined under the Act as knowledge and expression of Aboriginal tradition, such as oral traditions, performing arts, stories, rituals, festivals, social practices, craft, visual arts, and environmental and ecological knowledge, that is not widely known to the public. This enables Traditional Owners to decide whether and how their traditional knowledge is used and for what purpose. Stories, language and memories continue to link Aboriginal people to the parks.

Physical evidence of Aboriginal heritage includes thousands of places and objects across the River Red Gum Parks that are listed in the Victorian Aboriginal Heritage Register, and many more are still to be identified and recorded. Aboriginal heritage places represent aspects of Aboriginal history, culture and life from the distant past through to the present day.

Across the landscape, the River Red Gum Parks contain ancestral burial mounds, hearths, middens, culturally modified trees, axe-grinding grooves, flaked stone tools, grinding stones and ground edge axes

Other important cultural places include campsites and settlements, work places, ceremonial areas, sites of conflict, pastoral stations, missions, and sites linked to protest, self-determination and cultural learning. For example, Hattah–Kulkyne National Park and Bumbang Island Historic Area are two of the many areas dense with recorded Aboriginal places (Edmonds 1994). The area known as The Flats in Shepparton Regional Park is particularly significant because of its connection with the Cummeragunja walk-off in 1939 and the return of many Yorta Yorta people to Country; it has the largest known artefact scatter in the River Red Gum Parks.

Only a small percentage of the planning area has been surveyed, and there is little doubt that much more evidence of Aboriginal culture will be recorded in the future. These places and objects, together with stories, memories and language, continue to link Aboriginal people with the River Red Gum Parks. Traditional Owner access to the land and resources is important to enable these connections to continue.

Physical elements of Aboriginal heritage may be disturbed or destroyed by natural processes, such as rain, riverbank erosion, fire and flooding, as well as by rabbits and regeneration of River Red Gum trees.

Visitors can disturb sites by camping, digging trenches and fire pits, digging stairs in riverbanks, and burying toilet waste, particularly on river frontages associated with Aboriginal mounds and middens. Some access tracks, camping areas and other facilities are causing unacceptable damage to Aboriginal places and will be closed, moved, realigned or resurfaced and rehabilitated to prevent further damage.

Illegal activities and deliberate vandalism can expose or damage heritage places. Illegal off-track driving and trail bike riding may result in significant damage, particularly to Aboriginal ancestral remains on sand hills, dunes and burial mounds. Illegal firewood collection can destroy scarred trees.

Authorised uses such as timber harvesting, stock grazing, prospecting and fossicking, gravel and soil extraction, water regulation, and the construction of telecommunications and other public infrastructure can cause significant harm to a wide range of Aboriginal heritage values, particularly because of the scale and extent of vegetation and ground disturbances from such activities. Parties undertaking these activities are required to undertake due diligence to ensure they comply with the Aboriginal Heritage Act.

Activities such as ecological and fuel-reduction burns, the construction and maintenance of roads, tracks, park infrastructure and assets, pest management works, soil ripping, tree planting, the establishment of firewood collection areas, vegetation removal, Aboriginal heritage conservation works, and a wide range of other park management activities could cause significant harm to Aboriginal heritage. Parks Victoria and other responsible agencies must undertake due diligence to protect Aboriginal heritage and comply with the Aboriginal Heritage Act. This is a requirement even in areas with previously disturbed footprints and activity.

It is an offence under the Aboriginal Heritage Act to injure, damage, deface, desecrate, destroy or otherwise harm Aboriginal cultural heritage unless acting in accordance with a cultural Heritage Permit, an approved Cultural Heritage Management Plan, an Aboriginal Cultural Heritage Land Management Agreement or in certain other restricted circumstances, such as essential activities for declared emergencies including bushfire suppression. These plans or permits must be in place before activities involving disturbance or potential harm to Aboriginal cultural heritage can occur.

A Cultural Heritage Management Plan must be prepared when high-impact activities are planned in an area of cultural heritage sensitivity, as defined by the Aboriginal Heritage Regulations 2007, and planning permits, licences and work authorities cannot be issued until the plan is approved. A Cultural Heritage Permit is required to undertake research on an Aboriginal place. Parks Victoria is currently preparing Cultural Heritage Management Plans for Hattah–Kulkyne National Park and the parks northwest of Hattah. The plans will assist in identifying and protecting cultural heritage values. Parks Victoria aims to prepare plans for all areas along the Murray River.

Introducing Aboriginal language and place into the River Red Gum Parks would recognise and encourage respect for Aboriginal values and knowledge. For example, there is some support for replacing the name ‘Warby–Ovens’ with an Aboriginal name for the park.

Goal	
Aboriginal cultural heritage is respected, understanding and protection of landscapes and values is enhanced, and Aboriginal cultural connections are an integral part of cultural heritage management.	
Strategies	Park
Strengthen Traditional Owner and Registered Aboriginal Parties communities' connections through supporting and facilitating access to Country for cultural practices, events, activities and gatherings, and traditional use of natural resources.	All
Work with Traditional Owners and Registered Aboriginal Parties to interpret Aboriginal cultural heritage, knowledge and connections and support gathering and sharing of knowledge in accordance with the wishes of the Traditional Owners.	All
Investigate using appropriate Aboriginal or local names for specific localities, and unnamed visitor sites and tracks. Support, where appropriate, renaming of features, places and roads and tracks with Aboriginal names.	All
Investigate using an Aboriginal name for Warby–Ovens NP and geographic features.	Warby–Ovens NP
Use park signs, information and maps to acknowledge Aboriginal culture and, where appropriate, use Aboriginal language to name features, places and tracks.	All
Enhance cultural heritage visitor and tourism experiences with park visitor information and interpretive services such as Aboriginal tour guides.	All
Encourage and support shared learning about contemporary and traditional land management and ecology, building skills and capacity through mentoring for staff and contractors. Explore opportunities and partnerships to assist Traditional Owner involvement.	All

Goal	
Traditional Owners and Registered Aboriginal Parties guide the protection of Aboriginal heritage including places and objects of cultural significance.	
Strategies	Park
Collaborate with and assist Traditional Owners and Registered Aboriginal Parties to ensure legislatively compliant, effective and respectful management, monitoring and interpretation of cultural sites. Ensure all new site and survey data is lodged with Aboriginal Victoria.	All
Work with Traditional Owners to direct visitors away from burial and ceremonial areas and other highly sensitive locations, and where feasible provide alternative or impact-free access and camping areas for visitors.	All
Work in partnership with Traditional Owners and Registered Aboriginal Parties to develop cultural landscape-scale, strategic approaches for the planned management and protection of Aboriginal ancestral remains, associated items and ancestral burial sites, and to return Aboriginal ancestral remains to Country and ensure their ongoing protection.	All
Liaise with Traditional Owners to ensure visitor access and activities, and, where feasible, fire and flood mitigation strategies, prevent avoidable damage to Aboriginal places.	All
Establish agreements and protocols with Traditional Owners and Registered Aboriginal Parties about routine management methods such as rabbit control, track maintenance, and the protection of heritage places and intangible heritage. Educate park staff and contractors on these protocols.	All
Develop opportunities to ‘walk the land’ and work with Traditional Owners and Registered Aboriginal Parties to improve management decisions.	All
Provide annual operations programs to Traditional Owners and Registered Aboriginal Parties for review to prevent proposed works affecting cultural values and places.	All
Establish protocols for the public use and presentation of Aboriginal information with Traditional Owners and Registered Aboriginal Parties, and distribute to the tourism industry and other relevant users. Promote awareness of the intangible heritage provisions in the Aboriginal Heritage Act.	All
Work with the Aboriginal Heritage Council and Aboriginal Victoria to recognise appropriate techniques for burials conservation and restoration works, and seek to reform regulatory barriers for delivering best practice Aboriginal heritage management.	All

Aboriginal burials and ancestral remains

Aboriginal burials are extremely significant to Traditional Owners and represent a direct link to their ancestors and Country. The River Red Gum Parks and reserves are very significant areas for the protection of Aboriginal ancestral remains. Aboriginal burials are particularly common and widespread in areas in north-western Victoria.

Aboriginal burials occur in many places and landforms. The most common burial places are on sandy lunettes and beside water (including prior streams and waterways), sand dunes near beaches, Aboriginal mounds, middens and bushland. Burials may also be marked by, or found in, trees or in rock shelters. Fragments of bones may be found exposed in eroding riverbanks, dry and sandy places, and areas where ground disturbance has occurred.

Ancestral remains that have been exposed in eroded landforms can appear as a group of bone fragments, possibly including teeth. Ancestral remains may also be complete bones or a complete skeleton of an individual person. Aboriginal people were often buried with important social, spiritual, ceremonial and cultural items, such as stone tools, ochre, shells or, in recent history, coins and clay pipes; these items are to be treated with the same respect as the remains themselves. Ancient Aboriginal cemeteries may be small, or they may be spread over vast landscapes and contain many thousands of burials. Massacre sites from pre- and post-colonial conflict may also occur. It is of great importance that Aboriginal ancestral remains are left undisturbed.

Due to the extensive scale and distribution of ancestral remains in many parts of the landscape, only a fraction have been recorded and registered; this represents a significant challenge for management. Parks Victoria must take great care and diligence when undertaking any management activity in this highly sensitive cultural landscape and must consider how to minimise the risk of disturbance to known and unknown sites. Protecting Aboriginal ancestral remains and burials on Country is challenging given the effects of climate change, erosion, human interference and animal disturbance from introduced species and burrowing pests, such as rabbits. Threats include damage from illegal off-track use of four wheel drives and motorcycles. Many of the parks are also recovering from a legacy of past land use, vegetation clearing, the creation of roads and tracks, rabbit warren ripping, fencing, ploughing, quarrying and other past disturbances.

In the past, Aboriginal ancestral remains were stolen from their burial sites by people who considered themselves to be 'collectors' and researchers. Aboriginal people in Victoria and across Australia are working tirelessly with museums, universities and government organisations to ensure that the remains of their ancestors are returned to Country for burial in a respectful and culturally appropriate manner. The process of repatriation can be long and have a huge emotional toll for all involved.

Parks Victoria works in partnership with Traditional Owners to return Aboriginal ancestral remains to Country on land managed by Parks Victoria to ensure their ongoing management and protection. Conservation of disturbed ancestral remains and sites may also involve a range of on-ground works and practical techniques to stabilise and rehabilitate impacted sites. It is critical that individuals participating in highly sensitive responsibilities are supported to ensure their cultural, spiritual, emotional and mental wellbeing and safety.



4.2 Post-colonial settlement heritage

The first colonial incursions into the planning area took place in 1824, when Hamilton Hume and William Hovell passed through on their journey from Sydney to the southern coast. Thomas Mitchell's glowing accounts of the lands he traversed in 1836 drew the first wave of drovers and squatters to the area, first around the Wodonga area and then gradually farther westward. Pastoral stations were established, homesteads were built, and lands were fenced to retain stock, starting a process of enormous change across the whole landscape.

The period marked significant changes to Aboriginal populations that resulted from introduced diseases, conflicts, displacement and attempted assimilation of Aboriginal people. Aboriginal artist Tommy McRae lived near Lake Moodemere in the late 1800s and illustrated aspects of traditional Aboriginal life and depictions of early European and Chinese settlers.

In less than 200 years, an Aboriginal cultural landscape became overlaid by towns, settlements and rural industries. Sheep and cattle were grazed in the woodlands and grasslands, and even in stony country. Timber-cutters and saw millers harvested timber from the forests, creating local industries and workforces. Public land management initially focused on utilising natural resources, until a growing appreciation of nature and an increasing demand for recreation opportunities led to the creation of today's River Red Gum Parks network (Context 2014).

The post-colonial settlement history of these parks encompasses a wide range of themes: squatting, settlement, bushranging, grazing, agriculture, forestry, river transport, recreation, irrigation and, more recently, tourism (table 4.1). Historic places (dating from the time of the first colonial arrivals to the present) are managed to conserve their cultural values in accordance with the *Heritage Act 1995 (Vic.)*, and the Burra Charter (Australia ICOMOS 2013). The locations and details of historic places are held in Parks Victoria's Asset Information System to help protect the places in the event of proposed works, fire suppression or other activities in the area. The Victorian Heritage Database (HCV 2016) includes the Victorian Heritage Register, which lists the State's most significant places and objects and provides public access to information about historic places in the planning area. Relatively little work has been undertaken to thoroughly survey historic places in the River Red Gum Parks and

reserves, particularly in the north-west. Consequently, most places are not recorded on the Victorian Heritage Register or in the Parks Victoria Asset Information System.

Four historic reserves are managed primarily to conserve and protect significant historic and cultural associations — for example, Major Mitchell Lagoon Historic Area was visited by Mitchell’s party, who camped nearby, and Bumbang Island Historic Area is linked to river transport and is rich with evidence of Aboriginal use and occupation, including over 600 scar trees.

The majority of post-colonial settlement heritage places consist of relics from pastoral, river transport and timber harvesting days. They include buildings, fences, stockyards, bridges, water supply and regulation systems, sawmill sites and charcoal kilns. Evidence of former forestry activities are also prevalent, including ringbarking of River Red Gums and the experimental forestry planting of Monterey Pine at Nursery Bend. Other locally significant post-colonial activities and features include tobacco farming, pile trees, an internment camp, Masters Landing, Old Headworks, graves at Cemetery Bend, and a nursery site.

Threats to historic places include bushfire, extreme weather events, visitor activity, souvenir hunting, pilfering, inappropriate improvements or management activity and deliberate vandalism. Interpretation of places can build understanding and protection of sites. Involving the community in planning and decision-making is essential to respect and strengthen ongoing connection and cultural values.

Goal	
The cultural significance of historic areas and places is conserved, and appropriate compatible use permitted.	
Strategies	Park
Protect values of Bumbang Island and Major Mitchell Lagoon Historic Areas and Berribee Homestead and Koondrook historic reserves in consultation with local and Traditional Owner communities. Where needed, prepare Heritage Action Plans or statements to guide appropriate compatible uses.	Historic reserves
Develop heritage action statements for priority heritage places or areas.	All
Explore the use of smartphone technology to deliver interpretation. Progressively review and update information and interpretation material including information boards.	All
Ensure all cultural and heritage places and features are noted in Parks Victoria databases to ensure protection in the event of works or fire-suppression activities in the area.	All
Seek appropriate heritage listing of sites and places.	All
Remove and rehabilitate, or ameliorate, inconsistent and undesirable existing signs, structures and facilities that intrude on river and other landscape values and do not have historical significance.	All
Maintain and restore the condition of at-risk heritage places listed on the Victorian Heritage Register.	All



Goal	
Heritage and connections are recognised and respected, and understanding of heritage values and places is enhanced.	
Strategies	Park
Use community knowledge and skills and facilitate volunteer involvement in managing historic places and promoting appropriate use.	All
Involve the community with interpreting the parks' heritage, encourage participation as tour guides, and record the community's knowledge of heritage values, stories and connections.	All
Explore opportunities for visitors and communities to celebrate, improve and create new connections and work to protect and promote heritage values.	All
Undertake comprehensive on ground surveys of historic sites to identify and assess their significance for inclusion on the Victorian Heritage Register and Parks Victoria Asset Information System.	All
Consult with communities where a change to the access to places is required (for example, for public safety or site protection), recognising that such changes may affect their connections.	All
Improve understanding of historic areas as cultural landscapes, and support their use for cultural research and education.	Historic Areas
Enhance cultural heritage visitor and tourism experiences with park visitor information and the interpretation of key stories and themes.	All
Provide opportunities for research into social history, technological change, past land uses and impacts, and the significance of particular heritage places.	All

Table 4.1: Themes and stories of the River Red Gum landscape (adapted from Context 2014).

River Red Gum Parks theme	Victoria's themes	Parks, places, associations
<p>Creating a cultural landscape</p> <p>Culture and landscape are inextricably intertwined across the River Red Gum Parks' landscapes, evidenced in knowledge about how the landscape was formed, through shaping of the landscape, and through work, recreation and advocacy.</p>	<p>Shaping Victoria's environment.</p> <p>Building community life.</p>	<p>Stories about the formation of the land and water.</p> <p>Scar trees, shell deposits, mounds, ancestral burial sites, ceremonial areas: e.g. scarred trees (Gunbower NP, Lower Goulburn River NP).</p> <p>Early pastoral sites, grazing, stock yards, hut sites: e.g. mustering yards in the Warby–Ovens and Gunbower NPs.</p> <p>Living in remote places: Hattah–Kulkyne Military Internment Camp and Beltons Bridge (Hattah–Kulkyne NP); graves, Cemetery Bend, Gunbower NP.</p> <p>Recreation in the outdoors: fishing, camping, picnicking, water-skiing, swimming, canoeing; Grahams Hut (Gunbower NP).</p> <p>Protecting land first for its resources, later designating parks.</p>
<p>Maintaining Aboriginal identity</p> <p>The distinct experience of Aboriginal people in the history of the River Red Gums region, relating to traditional land uses and ties to Country, working in local industries, advocating for civil and land rights, and regaining land management responsibilities.</p>	<p>Shaping Victoria's environment.</p> <p>Peopling Victoria's places and landscapes.</p> <p>Transforming and managing land and natural resources.</p> <p>Governing Victorians.</p>	<p>Stories about the formation of the land and water: specific locations and features such as hills and dunes; scarred trees.</p> <p>Scar trees, shell deposits, mounds, ancestral burial sites, tool-making areas, ceremonial areas: e.g. artefact scatters (Shepparton RP); Bumbang Island HA, rich with evidence of Aboriginal use and occupation, includes over 600 scarred trees.</p> <p>Missions and settlements: Spud Lane Camp and Rumbalara Housing Settlement (Lower Goulburn NP).</p>
<p>Exploiting and managing natural resources</p> <p>The role of forested landscapes in supporting a wide variety of economic activities, with timber and pastoralism the most significant, closely linked to water and the river.</p>	<p>Peopling Victoria's places and landscapes.</p> <p>Transforming and managing land and natural resources.</p> <p>Building Victoria's industries and workforce.</p>	<p>Colonial explorations: e.g. Major Mitchell Lagoon HA was visited by Mitchell's party, who camped nearby.</p> <p>Squatters runs and pastoral stations: e.g. homestead site, Masters Landing and cottage (Gunbower NP); Taminick Run in the Warby Ranges; Kulkyne drop-log stockyards (Hattah–Kulkyne NP).</p> <p>Water as a vital economic resource: pumps, regulators, weirs, canals, irrigation infrastructure; Shillinglaw's Regulator; headworks (Long Bend, Gunbower NP); river regulation works (Leaghur SP); Psyche Bend pumps (Kings Billabong Park).</p>

continued on next page

Table 4.1: (continued)

River Red Gum Parks theme	Victoria's themes	Parks, places, associations
		<p>Using and protecting timber resources: coupes, timber mills, tramways, designated reserves, ring-barked trees, place and track names, regeneration areas e.g. Timber Cutting Stage, FCV Nursery and experimental conifer plantation (Nursery Bend Nc 1), Robsons Mill (Gunbower NP); Lake Hattah pumping station (Hattah–Kulkyne NP). Smaller industries: gold, tobacco, charcoal e.g. tobacco farm site (Gunbower NP); Moonah Track and Wattle Track charcoal pits (Hattah–Kulkyne NP); Killawarra sawmill and charcoal kiln sites (Warby–Ovens NP).</p>
<p>Living and working in the forest Forests offered rich human experiences for people living or working in the forests, Traditional Owners, workers, rangers.</p>	<p>Peopling Victoria's places and landscapes. Connecting Victorians by transport and communications. Transforming and managing land and natural resources Building towns, cities and the garden state.</p>	<p>Selecting land and farming: homesteads, fences, clearings, sheep washes; Two Bays Homestead an nursery site (Nyah–Vinifera NP); Wenhams Track Homestead (Newnhams Flat, Warby–Ovens NP); Berribee Homestead (Murray–Sunset NP); Warby Falls weir and wool scour race complex (Warby–Ovens NP see Vines 2001).</p> <p>Opening up the land for small farmers: closer and soldier settlement, e.g. former irrigation channel, Vinifera forest (Nyah–Vinifera NP).</p> <p>Pathways through the landscape: Aboriginal pathways, tracks and roads, railways, Robinvale–Euston Coach Road (proposed Murray River Park).</p> <p>Travelling and trading along the rivers: shipwrecks wharves, boat landings, river boats, navigation trees, bridges, punt and ferry crossings, e.g. the <i>Alwein</i> and <i>Kookaburra</i> shipwrecks, ferry crossing (Nyah punt), Nyah Road bridge over Murray River (Nyah–Vinifera Park); Bumbang Island HA, linked to river transport; Lindsay Creek South ferry crossing (Murray–Sunset NP); river punt site (Kings Billabong Park).</p> <p>Special named trees, valued as landmarks, e.g. Eagle Tree with cut-in steps, Gunbower Island (Gunbower NP).</p>
<p>Living with natural processes The story of water and fire in the landscape, the natural cycles and the impacts on human activities</p>	<p>Shaping Victoria's environment.</p>	<p>Responding to drought and floods: controlling water flows and turning water to new purposes e.g. irrigation channel, Nyah–Vinifera NP.</p> <p>Watching for fire and seeking refuge: Warby Fire Tower site (Warby–Ovens NP); moving timber mill out of the forest in response to fire risk. Cultural fire practices.</p>



Reedy Lagoon regulator,
Spence Bridge Education Area

5 Water for Country

Water flowing in the rivers, across the floodplains and through the lakes and wetlands is key to the health of flood-dependent River Red Gum ecosystems. Environmental flows, restored and delivered in cooperation with catchment management authorities, Traditional Owners and other partners, maintain and improve the health of the parks, and the vegetation communities and fauna they support.

5.1 Waterway and water management

The Murray River is one of the main waterways in an immense region, the Murray–Darling Basin, through which thousands of interconnected creeks and rivers flow. Most parks and reserves in the planning area have frontage to the Murray, Ovens or Goulburn rivers or their tributaries.

For the area’s Traditional Owners, the waterways are an important and ongoing source of food, fibre and medicine, and places to camp, hunt, fish, swim and connect with traditional cultures and stories, to ensure that they are passed on to future generations (DEPI 2013). The rivers and waterways are pathways that link different First Nations and allow people to move across the landscape. Access to water is vital for the wellbeing of Aboriginal people and their ability to care for Country. Riverbanks were often places of initiation and birthing, and remain as places to connect to traditions through ceremonies, and wetlands provide a range of rich food resources. Traditional Aboriginal culture revolved around relationships to the land and water which hold physical, social, environmental, spiritual and cultural significance (chapter 4). Most Aboriginal cultural heritage sites are within 100 m of a waterbody.

Water is significant in the landscape and the key driver of the inland waters and wetlands natural ecosystem. The Red Gum forests and wetlands (section 6.1) largely depend on flooding for regeneration and the water they need to survive and maintain their ecological functions. A number of large rivers (including the Ovens, Goulburn, Campaspe and Loddon rivers) flow through the landscape, feeding into the Murray River and influencing the inundation patterns of the adjoining floodplains.

Parks and reserves along rivers, wetlands and the associated floodplains support a large array of native flora and fauna. The floodplains are important in the movement of sediment and nutrients and are a significant interface between aquatic and terrestrial systems. Healthy rivers are fundamental to environmental, social and economic futures, providing ecosystem services, such as aquatic habitat, water availability and connectivity opportunities for natural ecosystems, and a rich landscape for tourism and recreational opportunities.

Past waterway management

The flow and flooding regimes of most of the waterways in the planning area have been greatly altered since European settlement. The Snowy Mountains Scheme and major dams, such as Dartmouth, Hume and Eildon, have reduced the frequency, extent and duration of winter and spring flooding on many of the floodplains.



Before (left) and after (right) environmental watering in 2006 on Lindsay Island, Murray–Sunset National Park.

Flow regimes in the Ovens River are closer to natural, due to the absence of major impoundments in the catchment, although summer flows in the Lower Ovens are very low in dry years, because of high agricultural and domestic off-take of run-of-the-river flows. In contrast, in the Goulburn and Murray rivers, delivery of irrigation water to farmers in summer and autumn, has reversed the seasonality of flows. The Murray, in particular, is often running at bank-full capacity during the drier months. These alterations to flow and flooding regimes are having significant impacts on biodiversity and ecosystem processes in the rivers, wetlands and floodplains of the River Red Gum Parks. Floodplains and wetlands require periodic inundation to maintain the health of water-dependent ecosystems, particularly in providing suitable habitat conditions. Water requirements for healthy ecosystems depend on the minimum flood frequency and duration rather than rainfall (VEAC 2008). Insufficient flooding has caused long-term impacts to the health of wetlands and riverine forests in the planning area (VEAC 2006). Alterations to waterways and localised flows caused by weirs, levees, pumps and other water regulation infrastructure, together with climate change, have resulted in most rivers in the planning area now being in poor condition.

The harvesting of water into dams and storages has had the greatest impact on the smaller to medium-sized floods that occurred frequently under natural conditions. This has resulted in longer dry periods than would have occurred prior to development, and reduced the length of time that water ponds in the wetlands and depressions on the floodplain.

Many of the waterways within the planning area are used for the delivery of water within the northern Victorian irrigation area. Generally, the release of water from storages follow crop demand patterns, resulting in lower winter and higher summer flows than would have occurred under natural conditions.

This is most pronounced in the Goulburn River, the second-largest tributary to the Murray River and a key driver of flooding within the Lower Goulburn National Park and downstream sites such as Gunbower National Park. In less regulated systems, such as the Ovens River, flow is influenced by the extraction of water for stock and domestic purposes, reducing summer

flows that are needed to maintain water quality and refuge areas for aquatic animals such as fish and platypus.

Levees constructed to protect towns and farms from flooding further affect the movement of water across the floodplain. An extensive network of levees exists within the River Red Gum Parks. These levees pose challenges for future management, particularly around the potential environmental impacts of levee maintenance activities.

Climate change is expected to cause further stress to waterways and floodplain ecosystems (section 6.1). These may include increased frequency of 'blackwater' and blue-green algae events, stream 'cease to flow' events and smaller less frequent flooding in wetlands. Targeted works to improve the condition of priority waterways (such as the provision of environmental water, restoration of riparian vegetation, invasive animal and weed control, in-stream works to improve refugial habitat) are expected to reduce the severity of climate change impacts on aquatic communities, but they may be inadequate to maintain condition under worst-case future climate scenarios (North East CMA 2016).

The Murray–Darling Basin Plan has a large influence on the management of water in the planning area and aims to drive changes in many aspects, affecting water recovery, land use, irrigation efficiency and environmental water management. The River Red Gum Parks fall within the southern area of the Murray–Darling Basin. In response to declining environmental health across the basin, the Basin Plan was developed under the *Water Act 2007* (Cwlth) to ensure sustainable use of the Basin water resources, setting a water recovery target of 2750 gigalitres for environmental use.

The plan sets overarching objectives for the health of the basin and complements the aims of this plan. The high-level Basin Plan objectives are to:

- protect and restore water-dependent ecosystems of the Murray–Darling Basin
- protect and restore the ecosystem functions of water-dependent ecosystems
- ensure that water-dependent ecosystems are resilient to climate change and other risks and threats
- ensure watering is coordinated between managers of planned environment water, owners and managers of environmental assets, and holders of held environmental water.

The *Victorian Floodplain Management Strategy* (DELWP 2016b) sets out the state's policies for managing flood risk and clarifies processes for determining ownership and accountability. Importantly, the strategy clarifies the institutional arrangements for managing urban and rural flood mitigation infrastructure and the role of Parks Victoria within this framework.

There are four catchment management authorities in the planning area: North East, Goulburn Broken, North Central and Mallee. The CMAs have each developed a regional catchment strategy for 2013–19. As the waterway managers, CMAs give specific directions for waterway management in regional waterway strategies and develop environmental water plans, in consultation with local communities. They outline potential environmental watering actions for the coming year in the seasonal watering plan, which is released annually by 30 June. The result is a defined volume of water set aside for environmental watering, with CMAs to monitor and report on environmental outcomes. Storage managers (water corporations) deliver water on behalf of users, including CMAs and environmental water holders. Figure 5.1 outlines water management responsibilities.

CMAs also work with communities and program partners to identify social, cultural and economic benefits in each region as secondary benefits of environmental water. As a program

partner, Parks Victoria contributes to environmental water planning and delivery for public land, facilitating the delivery of environmental water, structural works and waterway restoration measures. They provide advice in the development of environmental water management plans and the seasonal watering plans, and in the identification of associated risks. Environmental water management plans are developed for rivers, part of rivers and wetlands, for example, the Ovens River Environmental Water Management Plan (tributary of the Murray), Kings Billabong Environmental Water Management Plan (floodplain wetland) and Lake Cullen Environmental Water Management Plan (wetland).

Environmental water management

Environmental water is water that is specifically set aside in storages (such as dams and reservoirs) to improve the health and protect the environmental values of waterways, wetlands and floodplains (known as environmental entitlements¹). An environmental entitlement is a legal right to access a share of water available at a particular location and is subject to certain rules and conditions, similar to those entitlements held by other users such as irrigators. The rules and conditions of each environmental entitlement determine how much water is available from year to year, and can be determined based on a specified share of inflows, how much water is flowing in a river or other defined rules. Environmental water entitlements, including those held in trust for The Living Murray program, are allocated annually, depending on entitlement rules, seasonal conditions (including rainfall and runoff in the catchments) and the water available in storages.

The importance of restoring flows in water-dependent systems is recognised by the community, stakeholders, Traditional Owners and governments. Environmental water holders commit environmental water to different rivers and wetlands. They work together to ensure the coordinated delivery of water available under different environmental entitlements, and often have to prioritise allocations between large regions.

The Victorian Environmental Water Holder (VEWH) was established in July 2011 as the independent statutory body responsible for holding and managing environmental water entitlements on behalf of the state. It administers the ongoing collaborative management of water available under environmental entitlements, which are used to improve the health of Victoria's rivers and wetlands and the native plants and animals that depend on them, through regulation of the river systems.

VEWH works collaboratively with a range of partners to plan the release and delivery of environmental water (table 5.1). This includes working with the Commonwealth Environmental Water Holder and the Murray–Darling Basin Authority to access water held on behalf of the Commonwealth Government. Waterway managers are a significant partner, overseeing investigations into determining water requirements, undertaking water planning and coordinating the delivery of water and monitoring programs that support a process of learning and adaptation.

Catchment management authorities have responsibility for water management across the planning area except for Lake Moodemere, where Parks Victoria is the nominated waterway manager.

¹ In Victoria, environmental entitlements have been created largely through investment in water-savings projects, such as improving the efficiency of irrigation delivery systems. Some of the savings from this project are then converted into environmental water entitlements.

Hattah Lakes floodplain restoration

Hattah Lakes are located on the banks of the Murray River in north-west Victoria; they are an extensive complex of approximately 13 000 ha of lakes and floodplain in the Hattah–Kulkyne National Park. Twelve of the lakes are listed as internationally important wetlands and require regular flooding.

The lakes and surrounding floodplain contain 10 different vegetation communities and 115 significant flora species. The area supports at least 308 different native fauna species, of which 57 are considered threatened in Victoria or nationally. The lakes are of great importance to the Traditional Owners, and over 1000 Aboriginal cultural sites have been recorded.

Hattah Lakes have been degraded by changed flow regimes in the Murray River and by water extraction. Over decades, tree health declined across the floodplain, the diversity and abundance of wetland flora reduced, and there was less habitat for waterbirds, fish, frogs and turtles. Environmental watering was recognised as a key tool to address this declining trend.

The Hattah Lakes are recognised as an icon site under The Living Murray program. Projects completed in 2014 included:

- lowering high points in Chalka Creek to increase the frequency of natural inflows
- constructing a permanent pumping station to top up natural floods and fill the lakes during long dry periods
- constructing a regulator that allows water to be delivered to Lake Kramen, a large episodic lake some distance from the rest of the lakes
- constructing a series of regulators and stop banks that can control ponding in the lakes and allow water to be pumped to Red Gum and Black Box at higher elevations (MDBA 2012).

Collectively, these works allow watering of approximately 6000 hectares of the Hattah Lakes system, mimicking the flooding that typically occurs when the Murray River flows at 100 000 ML/day. The pump station makes it possible to achieve this same outcome at river flows of approximately 5000 to 10 000 ML/day, allowing water to be used more efficiently and reducing the economic impact of water recovery on basin communities.

A new project is being investigated through the Sustainable Diversion Limits program to build on the achievements of The Living Murray program and deliver water to other areas of the floodplain. The long-term approach is outlined in the Hattah Lakes Environmental Water Management Plan, which provides the framework for an adaptive 'learning by doing' approach. Annual monitoring measures progress toward the achievement of ecological objectives for the icon site and helps manage specific risks around watering activities. The initial results show a positive response from both native plants and animals.

Table 5.1: Water management responsibilities in Victoria.

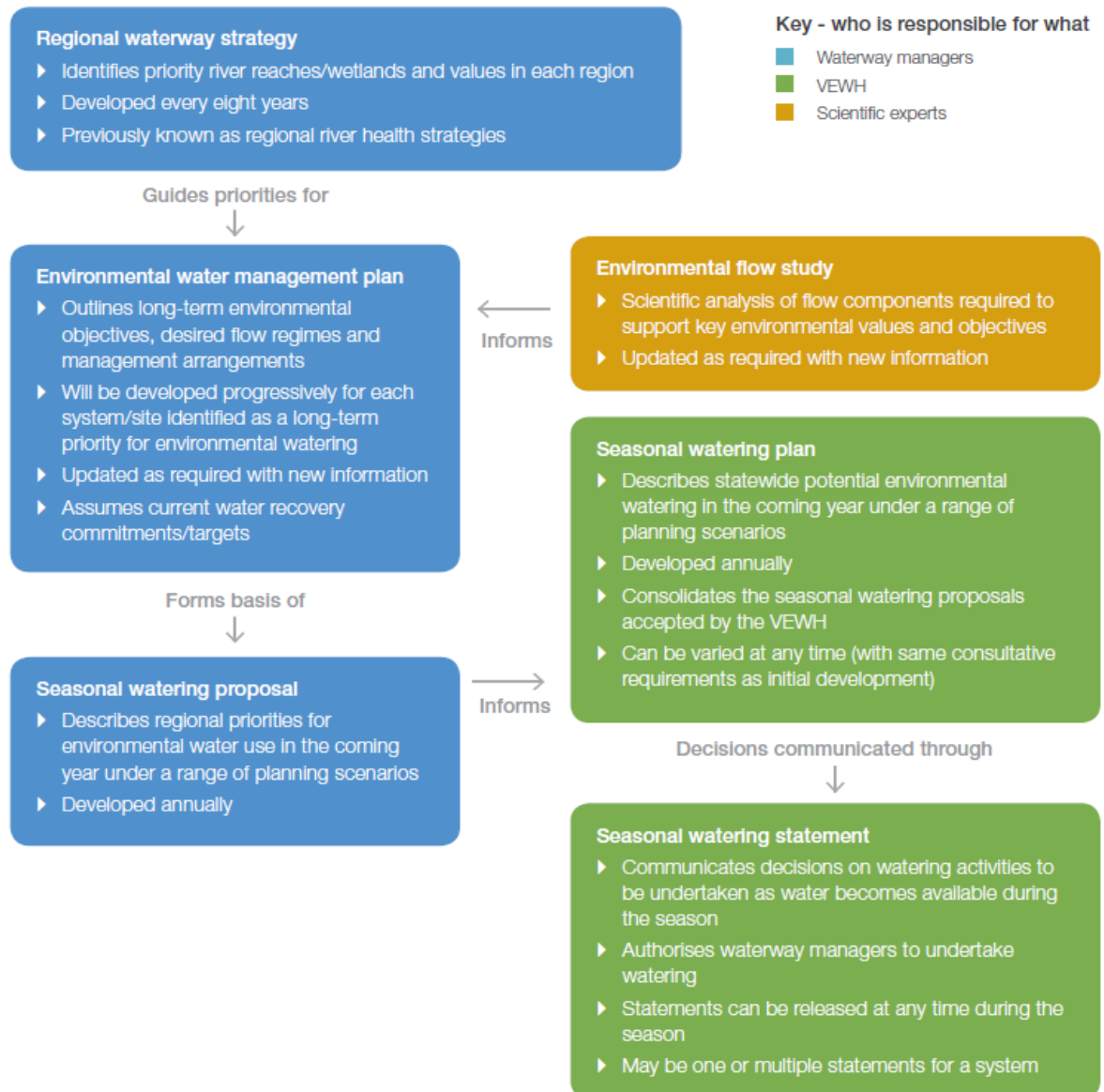
Group or agency	Role
Water holders	Water holders like the Victorian Environmental Water Holder , the Commonwealth Environmental Water Holder and the Murray–Darling Basin Authority commit environmental water to different rivers and wetlands. Water holders work together to ensure water delivered under different environmental entitlements is coordinated, and often have to prioritise across large regions (such as northern Victoria).
Storage managers	Water authorities such as Goulburn–Murray Water deliver water for all water users, including waterway managers and environmental water holders. They have responsibilities including operating and maintaining infrastructure (such as pumps, outlets and channels) and providing advice on water availability and use.
Public land managers	Public land managers such as Parks Victoria , Councils and DELWP are closely involved in environmental water planning and delivery for public land such as state forests and national parks. Through management agreements responsibilities may include maintaining infrastructure (such as pumps, outlets, gates and channels) and installing public signage.
Local communities	Local communities, including Traditional Owners , local residents and interest groups , help identify the important environmental values in their region and monitor the success of environmental watering. Their input is important because they are often involved with local rivers and wetlands and bring a range of environmental, cultural, social and economic perspectives to the program.
Scientists	Scientists provide advice about how environmental water will support native plants and animals, and work with waterway managers to monitor, evaluate and report on the outcomes of watering activities.

Source: Adapted from VEWH website.

Using the state and regional strategies as a basis, CMAs and the VEWH undertake detailed planning for environmental water at both the long-term and annual scales. This includes the development of site-specific environmental water management plans by the CMAs and a state-wide annual seasonal watering plan by VEWH, as outlined in figure 5.1. Collectively, these plans provide detailed objectives for environmental water management across the River Red Gum planning area and set out a range of actions, including complementary works needed to mitigate risks and manage threats to achieving the objectives (such as pest plant and animal control). Despite river regulation and climate change, floods like those in 2010–12 and 2016 will continue to occur in the planning area. While floods are critical to ecosystem health, they can cause water quality issues, erosion, damage to riparian vegetation, loss of in-stream habitat and the spread of invasive species.

Floods can also adversely affect park management activities and visitor access. Major floods can cause damage to bridges, fences, visitor facilities and roads. Flooded areas of parks and reserves may have to be closed, limiting access for visitors to campsites and day visitor areas. Floods in 2011 and 2016 significantly affected visitor access to the planning area for several months. Environmental watering can also necessitate closing inundated areas of parks and reserves, thereby restricting visitor access. Both the impacts and the benefits of environmental watering need to be considered in the development of environmental watering plans, and affected communities and user groups must be consulted to identify opportunities to minimise impacts, where possible.

Figure 5.1: Water management responsibilities (VEWH 2016).



Improving water delivery

The use of infrastructure to divert water from river onto floodplains can allow priority environmental assets to be watered in the absence of over-bank flows. Such projects have demonstrated that equivalent, or better, environmental outcomes can be achieved with these assets with a lower volume of held environmental water than would otherwise be required. Two significant projects occurring within the planning area are The Living Murray project, and the Sustainable Diversion Limits program.

Collectively these projects allow large areas of floodplain within the River Red Gum Parks to be inundated using environmental water, and provide a key response to managing the threat of changed flow regimes in this landscape.

The Living Murray Initiative is one of Australia's most significant river restoration programs. The program is delivered by six partner governments as outlined in the 2004 Murray–Darling Basin Intergovernmental Agreement and focuses on maintaining the health of six icon sites, chosen for their international significance, high ecological and economic values, and cultural and heritage importance to Aboriginal people. Water recovered through this program is set aside for use at the icon sites, and additional funding was provided for the construction of works and measures to deliver water to the sites (see box: Hattah Lakes floodplain restoration).

An additional seven Victorian works projects are proposed under the Sustainable Diversion Limits program. Funding for these projects is provided through the Basin Plan, and the works must be constructed and operational by June 2025. The goal of the program is the delivery of environmental outcomes by using less water. The proposed environmental works projects involve using engineering works such as regulators, pipes and pumps, to efficiently and effectively deliver water to wetlands and floodplains. The proposed environmental works projects involve using engineering works such as regulators, pipes and pumps, to efficiently and effectively deliver water to wetlands and floodplains.

In combination the seven projects have the potential to reduce the amount of water taken out for consumptive use to meet the environmental objectives set in the Basin Plan. The following locations have been identified for Sustainable Diversion Limit projects; Lindsay Island, Wallpolla Island, Hattah Lakes, Belsar–Yungera, Burra Creek, Vinifera and Nyah.

These projects may have a direct impact on the Plan, most notably through effects on the riverine infrastructure provided along the Plans waterways, through increase flow, and through the upgrading and construction of roads to service the projects. New and or upgraded roads may see a change in visitor behaviour, increasing demand at some sites and decreasing at others. The strategies reflect the potential for impact through these projects.

Other existing programs to restore connectivity between rivers and floodplains include the Sea to Hume Dam program, which installed fishways on ten weirs and barrages from the mouth of the Murray River in South Australia to the Hume Dam in its upstream reaches, opening up over 200 km of river for fish movement.

As a program partner, Parks Victoria contributes to environmental water planning for the parks and reserves, facilitates the delivery of environmental water, and delivers complementary programs such as invasive plant and animal control along rivers, across floodplains and in wetlands (section 6.1) to improve waterway value.

Environmental watering occurs in parts of the planning area other than The Living Murray sites. Structures used include existing structures typically built for past forestry activities, and outfalls in the irrigation network, historically used to relieve excess water in the system or for flood

mitigation control. Many of these structures are of uncertain ownership, and robust arrangements for future operation, maintenance and renewal are not in place. This can pose risks for public and staff safety. Where no other options exist, parts of the planning area have received environmental water through the use of temporary diesel pumps; ongoing pumping in this manner is a future option.

Goals	
Rivers and wetlands are healthy and well-managed; supporting environmental, social, cultural and economic values that are able to be enjoyed by all communities.	
Collaborative management of the flood-dependent ecosystems ensures appropriate water regimes that improve ecosystem biodiversity, ecological functioning, water quality and health, and provide for uses that depend on environmental condition.	
Strategies	Park
Support CMAs, DELWP, water authorities and environmental water holders in long-term watering and annual planning, water allocations, delivering water and monitoring ecological goals, using an adaptive management approach to guide environmental water management.	All
Liaise with CMAs to ensure that delivery plans for the implementation of site-based watering activities have appropriate mitigations for managing risks to the natural and cultural values and park users.	All
Assist with the delivery of environmental water through participation in operational advisory groups, for example, through the management of park closures during inundation events.	All
Effectively engage with Traditional Owners to ensure cultural objectives are considered in environmental works and measures projects.	All
Implement complementary pest, plant and animal control programs to achieve park goals (section 6.1) and objectives of site-based environmental water management plans.	All
Review and record water infrastructure and works to ensure appropriate ownership, maintenance and operational arrangements are in place to manage staff and visitor safety.	All
Work collaboratively with the CMAs to coordinate monitoring and research activities and share results.	All
Engage with the CMAs in the development of regional floodplain management strategies and provide advice to improve flow regimes by levee and channel maintenance or decommissioning activities as required.	All
Support CMAs in river health initiatives such as retaining snags and other aquatic habitats, management of blackwater and blue-green algae events, and litter management.	All
Work with DELWP, CMAs and local communities to identify and protect important environmental values such as refuge areas in times of drought and prevent impacts from pesticides and herbicides.	All
Liaise, monitor and adjust in response to CMA's federally funded Sustainable Diversion Limits program; including effects on riverine facilities and access roads, at the following locations; Lindsay Island, Wallpolla Island, Hattah Lakes, Belsar–Yungera, Burra Creek, Vinifera and Nyah.	All



The cycle of river flooding has cultural as well as environmental significance for Traditional Owners

5.2 Traditional Owners and their connections to water

Traditional Owners wish to have the provision of cultural flows recognised as water entitlements. This may lead to further changes in how water is managed across the River Red Gum Parks, as knowledge of the relationship between cultural flow requirements and environmental water requirements continues to grow.

Aboriginal peoples' sovereign rights over traditional lands and water are supported by a number of instruments, including the United Nations Declaration on the 2007 Rights of Indigenous Peoples, 2003 Indigenous Peoples Kyoto Water Declaration, and the 2008 Garma International Indigenous Water Declaration. The National Water Initiative, agreed in 2004 by the Council of Australian Governments, is the national blueprint for water reform. It requires state governments to take into account the possible existence of native title rights to water and requires plans to allocate water to native title holders. The state governments must ensure that Australia's First Peoples are able to access water, and that their cultural (social, spiritual and customary) objectives are incorporated into planning (such as in the *Victorian Traditional Owner Water Policy Framework* (FVTOC 2014).

The 2007 MLDRIN Echuca Declaration noted that water must be supplied in adequate quantity and quality to improve Traditional Owners' spiritual, cultural, natural, environmental, social and economic conditions. Cultural flows are recognised in the 2012 Murray–Darling Basin Plan developed under the Commonwealth Water Act. Murray Lower Darling Rivers Indigenous Nations are working with the Commonwealth and the states to ensure culturally appropriate water flows.

Aboriginal burials and ancestral remains within sensitive cultural landscapes are commonly in places associated with water. Therefore, there is a risk that aboriginal cultural heritage may be affected by environmental watering infrastructure projects and should be planned for.



Environmental watering, Hattah Lakes

Goal	
Traditional Owners are actively engaged in environmental water management and supported to achieve cultural flow aspirations.	
Strategies	Park
Support the <i>Victorian Traditional Owner Water Policy Framework 2014</i> on Aboriginal cultural water entitlements.	All
Effectively engage with Traditional Owners to ensure social, spiritual and customary objectives are better incorporated into environmental water planning and programs.	All
Develop partnerships with Traditional Owners to strengthen the definition and inclusion of cultural management objectives into environmental water and integrated in park management.	All
Ensure Traditional Owners' access to water for ceremonies and other cultural activities.	All
Promote research and community education about water and Traditional Owner connection, values and uses.	All
Work collaboratively with CMA's and Traditional Owners to ensure that planning and establishment for environmental watering infrastructure adequately responds to risks to aboriginal cultural heritage.	All



River Red Gum forest,
proposed Murray River Park

6 Caring for the Environment

The Red Gum forests, woodlands, wetlands and waterways are recovering from decades of insufficient flooding and severe stress. The health of the ecosystems and communities is improved, with populations of threatened, flood-dependent and other species maintained and made more resilient to climate change.

Targeted, effective and integrated programs and collaborative partnerships are reducing the impacts from feral animals, weeds and other threats. Scientific and Traditional Owner knowledge and involvement is improving environmental and fire management.

6.1 Healthy ecosystems

The River Red Gum Parks are extremely important for the conservation of a diverse range of species, communities, habitats and ecosystems. More than 1500 native vascular plant species — about 30% of the Victorian total — and more than 500 native vertebrate animal species are found in the planning area, as well as thousands of species of lesser known organisms such as mosses, invertebrates and fungi. The wetlands, rivers and floodplains are critical seasonal habitat for many birds, including 36 species protected by international treaties. The parks include three of Victoria's 11 wetlands listed under the Ramsar Convention as internationally significant as waterfowl habitat.

The parks are strongholds for a large number of threatened animals and plants, such as the Trout Cod, Superb Parrot, White-bellied Sea-Eagle, Squirrel Glider, Carpet Python, Mueller Daisy, River Swamp Wallaby Grass and Swamp Buttercup. About one-fifth of the 1500 native plant species and one-quarter of the native vertebrate animal species are threatened with extinction (VEAC 2006). A large number of existing and potential threats to the ecological integrity of the parks' ecosystems present particular challenges for the management of the parks.

The planning area encompasses parts of three of Australia's 85 IBRA (Interim Biogeographical Regionalisation of Australia) regions and includes 128 ecological vegetation classes (EVCs).

The parks protect land that is culturally important to the Traditional Owners for the whole of the environment, including nature and heritage as well as material and spiritual elements. Many plant and animal species are particularly important culturally and for food and medicine.

Many of the River Red Gum Parks ecosystems and their plant and animal communities are severely stressed and in decline as a result of changing patterns of water and use. If insufficient flooding continues there will be further deterioration of the expanse and condition of forests and wetlands, which are already in poor condition. This will have long-term impacts on the ecosystems, weakening resilience to the future impacts of climate change.

Park managers face a high degree of complexity and considerable uncertainty in managing the natural environment, particularly in the face of climate change. Broad management goals for the ecosystems in the River Red Gum Parks are to maintain and improve their ecological character, extent and diversity for the long-term protection of dependent species and communities and to reflect the Traditional Owners' signs of healthy Country.

This plan adopts a landscape-scale approach for protecting natural values so that complementary, effective and responsive action can be taken over the wide area. The owners and managers of private properties bordering the River Red Gum Parks have a direct interest in the management of the parks and reserves, as do the managers of adjacent Crown lands, such as state forests, and municipal land, such as local parks and reserves, which are not part of the River Red Gum Parks. Catchment management authorities also have an interest in the management of the parks and reserves. Similarly, Parks Victoria has a direct interest in the way land bordering the River Red Gum Parks is managed. These shared interests highlight the importance of a cooperative approach to management in a landscape context, rather than in isolation from the surrounding land. This approach can help to enhance the connectivity of parks and reserves with other high-quality habitat in the region, enabling animals to move through the landscape in search of food, shelter or mates, and reducing the likelihood of extinction of small, isolated populations.

For planning purposes, the 128 EVCs present in the River Red Gum Parks are grouped into nine sub-ecosystems within four natural ecosystems (table 6.1; see also appendix 1). However, most of the area of the Mallee Natural Ecosystem and the Semi-arid Woodland Sub-ecosystem occurs within the Mallee landscape; therefore, conservation actions for these will be included in the Mallee Parks Management Plan rather than being considered in this plan. The Grasslands Natural Ecosystem is scattered in small patches mostly within riverine forests and woodlands, including a small area of the Alluvial Plains Semi-arid Grassland EVC in Murray–Sunset National Park. Grasslands and plains woodlands ecosystems are managed as part of the Riverine Forests and Woodlands Sub-ecosystem.

The ecological conditions of the riverine and Box–Ironbark forests are reasonably well understood, but assessments are not comprehensive and there are large gaps in knowledge to be filled that will assist in adaptively managing the parks and reserves (chapter 9).

Table 6.1: Natural ecosystems and sub-ecosystems in the River Red Gum (RRG) Parks.

Natural ecosystem	Sub-ecosystem in this plan	Area in RRG Parks (ha)	% of total RRG Parks area
Inland Waters and Wetlands	Saline Wetland	1514	0.6
	Permanent Freshwater Wetland	7235	3.0
	Ephemeral Freshwater Wetland	19539	8.1
	Riverine Forest and Woodland ¹	131494	54.8
Dry Forests and Woodlands	Box–Ironbark Forest	3222	1.3
	Plains Woodland ³	3881	1.6
	Mixed Dry Forest	9898	3.8
	Semi-arid Woodland ²	20971	8.7
Mallee ²	—	42445	17.6
Grasslands ³	—	4915	2.0

¹ includes Treed Swampy Woodland Ecological Vegetation Division (EVD).

² Conservation actions to be included in the Mallee Parks Management Plan.

³ Managed as part of Riverine Forest and Woodland Sub-ecosystem.

Inland Waters and Wetlands Natural Ecosystem

The Inland Waters and Wetlands Natural Ecosystem includes all the planning area's rivers, lakes, waterways and waterbodies, and their associated vegetation. It is the dominant Natural Ecosystem in the River Red Gum Parks, covering 159 782 ha (about 66%) of the total area. The four sub-ecosystems in the River Red Gum Parks are Riverine Forest and Wetland, Ephemeral Freshwater Wetland, Permanent Freshwater Wetland and Saline Wetland. Table 6.2 lists the parks with the largest areas of these sub-ecosystems (Greening Australia 2014).

Extensive areas of this natural ecosystem have a high conservation value, but the often linear or localised distribution increases the susceptibility to threats.

Table 6.2: Inland Waters and Wetlands Natural Ecosystem in the River Red Gum Parks.¹

Sub-ecosystem	Reserve	Area (ha)
Riverine Forest and Wetland	Murray River Park (proposed) ²	25894
	Murray–Sunset National Park ²	19490
	Hattah–Kulkyne National Park ²	13479
	Gunbower National Park ²	7446
	Lower Goulburn National Park	7132
	Murray–Kulkyne Park	3450
	Warby–Ovens National Park ²	2745
	Shepparton Regional Park	2490
	Kanyapella Wildlife Reserve ²	1915
	Koorangie Wildlife Reserve ²	1911
	Leaghur State Park ²	1633
	Kings Billabong Park ²	1448
	Lower Ovens Wildlife Reserve	1177
Nyah–Vinifera Park	1165	
Ephemeral Freshwater Wetland	Murray–Sunset National Park ²	9636
	Murray River Park (proposed) ²	3370
	Hattah–Kulkyne National Park ²	1775
	Koorangie Wildlife Reserve	1147
	Murray–Kulkyne Park	521
	Lakes Powell and Carpul Wildlife Reserve	366
	Gunbower National Park	331
Permanent Freshwater Wetland	Murray River Park (proposed)	1268
	Lower Goulburn National Park	1099
	Murray–Sunset National Park ²	638
	Warby–Ovens National Park	364
	Shepparton Regional Park	212
Saline Wetland	Murray –Sunset National Park ²	668
	Duck Lake Wildlife Reserve	308
	Murray River Park (proposed)	109
	Lake Elizabeth Wildlife Reserve	94
	Cullens Lake Wildlife Reserve ²	625

¹ Areas of Plains Woodland Sub-ecosystem within the Dry Forests and Woodlands Natural Ecosystem are managed as part of the Riverine Forest and Woodland Sub-ecosystem.

² Parks with more than 100 ha of high conservation significance (Greening Australia 2014).

The ecosystem is considered to be generally declining in condition, although most of the wetlands in the planning area are rated good to moderate under the Index of Wetland Condition. Maintaining the water quality is important for this ecosystem, including the dependent aquatic species and riverine and floodplain vegetation communities. River Red Gum riverine forests and wetlands depend largely on flooding rather than fire for regeneration, and they are considered to be sensitive to fire. The dominant Riverine Forest and Woodland Sub-ecosystem has a minimum tolerable fire interval of 30 years and no maximum (Cheal 2010). Saline and freshwater wetlands have no ecological need for fire (DELWP 2015c).

A healthy inland waters and wetland ecosystem is a vital resource for human use, particularly irrigation. Parks Victoria works closely with CMAs to maintain or improve river and Ramsar and other wetland health, in concert with broader catchment and river strategies (chapter 5). DELWP leads wetland conservation in Victoria, including maintaining a wetland inventory and the Index of Wetland Condition, both of which are updated periodically.

The **Riverine Forest and Woodland Sub-ecosystem** comprises about 82% of the total area of the Inland Waters and Wetlands Natural Ecosystem in the River Red Gum Parks. Reserves with over 100 ha of high conservation significance are indicated in table 6.2 or appendix 2. The sub-ecosystem consists mainly of floodplain forests dominated by River Red Gum. On higher ground, where flooding is less frequent, Black Box is the dominant tree species. The understorey is typically open and dominated by grasses, sedges and herbs; grassy understoreys are particularly vulnerable to degradation from trampling and other causes. Some areas support Tangled Lignum or chenopod grassland, depending on local topography. Hydrological regimes are extremely important to the health of this sub-ecosystem, and in turn for the waterbirds and other fauna that depend on it. Black Box woodland is particularly dependent on episodic flooding to maintain canopy health.

Riverine Forest and Wetland supports many FFG (Flora and Fauna Guarantee Act)-listed communities and taxa: Lowland Riverine Fish Community; several listed bird assemblages; and many threatened species, including Golden Perch, Freshwater Catfish, Spotted Bowerbird, Ground Cuckoo-shrike, Inland Dotterel, Giles' Planigale, De Vis' Banded Snake, Dwarf Bitter-creed, Low Hibiscus, Dwarf Old Man Saltbush and Mallee Cucumber.

Goals

The health of inundation-dependent vegetation communities is maintained and improved, connectivity along rivers and dispersal opportunities between river channel and floodplains is enhanced, and habitat for dependent fauna species is enhanced, particularly in conservation zones.

Strategies to address the key threats facing this ecosystem are detailed in section 6.2.

The Ephemeral Freshwater Wetland Sub-ecosystem consists of areas subject to sporadic extended inundation, where plants may die during dry periods but grow rapidly from the soil seed bank when flooding returns. Permanent trees and shrubs may be present. Ephemeral Freshwater Wetland is widespread but localised in the River Red Gum Parks, mostly in the west. Priority EVCs are Disused Floodway Shrubby Herbland, and Floodway Pond Herbland. Threatened species that inhabit or occur in this sub-ecosystem include the Mallee Emu-wren, Superb Parrot, Silver Perch, Freshwater Catfish, Giles' Planigale, Apostlebird, Carpet Python, Plains Spurge, Slender Sunray, and Slender Love-grass.

Goal

The extent and condition of ephemeral freshwater wetlands is restored and enhanced to support declining flora and fauna species dependent on this habitat, particularly in conservation zones.

Strategies to address the key threats facing this ecosystem are detailed in section 6.2.

The **Permanent Freshwater Wetland Sub-ecosystem** consists of normally inundated waterbodies that support aquatic and semi-aquatic plants, and includes billabongs and floodplain wetlands within River Red Gum forests. Trees and shrubs may also grow on the margins. These waterbodies are widespread but localised in the River Red Gum Parks, with areas of high conservation significance centred in the Murray–Sunset National Park and Cullens Lake State Game Reserve. This sub-ecosystem supports several priority EVCs (Tall Marsh/Aquatic Herbland Mosaic, Spike-sedge Wetland/Tall Marsh Mosaic, Rushy Riverine Swamp, Tall Marsh/Open Water Mosaic). It is also important habitat for a number of threatened species, including the Golden Perch, Freckled Duck, Superb Parrot, Broad-shelled Turtle, Grey Falcon, Lagoon Spurge, Curly Flat-sedge and Lagoon Nightshade.

Goal

The condition of permanent freshwater wetlands is restored and enhanced as important drought refugia for threatened flora and fauna species.

Strategies to address the key threats facing this ecosystem are detailed in section 6.2.

The **Saline Wetland Sub-ecosystem** occurs on sodic soils and includes permanent salt lakes and seasonal brackish shrublands dominated by chenopods and succulents. This sub-ecosystem is rare in the River Red Gum Parks. It is restricted largely to the Kerang area, Lake Elizabeth Wildlife Reserve and Murray–Sunset National Park, with areas of high conservation significance in Murray–Sunset National Park, and Lake Elizabeth and Duck Lake wildlife reserves. Threatened species that occur in this sub-ecosystem include the Inland Dotterel, Murray Hardyhead and Lagoon Spurge.

Many highly invasive weeds are found in and spread via the rivers and streams. Degradation of native riparian vegetation along rivers is listed as a threatening process under the Flora and Fauna Guarantee Act.

Goal

The extent and condition of saline wetlands is maintained or enhanced to support declining flora and fauna species that depend on this habitat.

Strategies to address the key threats facing this ecosystem are detailed in section 6.2.

Ramsar wetlands

Gunbower Forest, Hattah–Kulkyne Lakes and Kerang Wetlands sites are listed under the Ramsar Convention (table 6.3). The sites (totalling 39994ha) are of international conservation significance. Gunbower Forest and Hattah–Kulkyne Lakes are also environmental sites in The Living Murray program.

These sites include areas of Riparian Forest and Woodland, Permanent Wetland, Ephemeral Freshwater Wetland, Saline Wetland and Plains Woodland sub-ecosystems. These communities are strongly influenced by hydrological regimes, with flooding promoting flora recruitment and waterbird breeding, including state-threatened colony-nesting species such as egrets. The areas provided a reliable source of water and rich resources for Traditional Owners and have many places of Aboriginal cultural heritage significance.

Table 6.3: Ramsar-listed wetlands in the River Red Gum Parks

Ramsar wetland	Areas managed by Parks Victoria	Other areas
Gunbower Forest	Gunbower National Park, Spence Bridge Education Area and a section of the proposed Murray River Park	Gunbower State Forest and some areas of other Crown land private land
Hattah–Kulkyne Lakes	12 of the 18 lakes in Hattah–Kulkyne National Park	—
Kerang Wetlands	Hird Swamp and Stevenson Swamp wildlife reserves, and parts of Kerang Regional Park and Kerang, Johnson Swamp, Cemetery Forest, Little Lake Charm, Cullens Lake and Koorangie wildlife reserves	Water supply reserves managed by Goulburn–Murray Water

The Gunbower Forest Ramsar site is recognised for its importance in containing a representation, rare or unique example of a natural wetland, and for supporting vulnerable, endangered or critically endangered species. Hattah–Kulkyne Lakes Ramsar site is listed for having vegetation types that are rare in the region and a significant proportion of the region’s remaining deep freshwater marshes and permanent open freshwater wetlands, and important habitat for over 50 species of waterbirds.

The Kerang Wetlands Ramsar site is listed for supporting vulnerable, endangered or critically endangered species including large numbers and diversity of waterbirds and migratory birds, and for supporting plant and/or animal species that are at a critical stage in their lifecycles. The shallow freshwater marshes and deep freshwater marshes of the area are among the rarest wetlands in Victoria.

Delivery of environmental flows to the sites has maintained the sites in fair to good condition. Barmah Island, a small part of Barmah Forest Ramsar site, is in the planning area. The island is recognised for its diversity of habitats, regularly supporting a range of waterbird species and some magnificent mature Red Gums. Management of Barmah Island is addressed as part of the whole site and in separate CMA and park plans.

DELWP reviews the status of the ecological character of Victoria’s Ramsar sites regularly against limits of acceptable change for the components, processes and services which are critical to the ecological character of the site. These limits are defined as the threshold at which the wetland is considered to have changed ecological character and may lead to a reduction or loss of the criteria for which the site was Ramsar-listed.

Management of sites was guided by Strategic Management Plans (DSE 2003a, 2003b, 2004a), however the 2013 Victorian Waterway Management Strategy (VWMS) established a new policy of incorporating Ramsar Site management planning in CMA regional waterway strategies for most sites. For example the overarching Kerang Wetlands management plan is embedded in the 2014–2022 North Central Waterway Strategy. Parks Victoria and CMAs work together to improve site management and specifically working with the NCCMA to develop the Kerang Lake Ramsar Action Plan to provide additional specific guidance to management agencies in delivery of outcomes.

Visitor management will include minimising impacts and providing education and interpretive material and signage at appropriate visitor sites in the following visitor experience areas (VEAs; section 7.3): Gunbower Forest (Gunbower VEA, Koondrook VEA and part of Echuca–Torrumbarry VEA); Hattah–Kulkyne Lakes (Hattah Lakes VEA and Kulkyne–Liparoo VEA); Kerang Wetlands (Kerang Lakes VEA; and Barmah Township VEA).

Table 6.4: Threats to Ramsar-listed wetlands in the River Red Gum Parks

Threats	Regulated freshwater permanent wetlands	Salt / Sewage disposal and drainage wetlands	Regulated freshwater intermittent wetlands	Unregulated freshwater intermittent wetlands
Climate change and severe weather events – Unseasonal flooding			Yes	Yes
Flood mitigation	Yes			
Invasive native species – aquatic vegetation e.g. Cumbungi and Typha			Yes	
Invasive non-native species – aquatic vegetation e.g. Arrowhead			Yes	
Invasive non-native species – non-woody weeds e.g. creepers	Yes			
Invasive non-native species – woody weeds e.g. willows, boxthorn, blackberry, briar rose	Yes	Yes	Yes	Yes
Invasive non-native species; carp and gambusia	Yes			
Invasive non-native species; cats, foxes, pigs, rabbits	Yes	Yes	Yes	Yes
Bushfire			Yes	Yes

Goals	
Ramsar sites are managed to maintain or improve the critical components, processes and services that make up the ecological character of the site such that the limit of acceptable change are not exceeded. Human uses are conducted sustainably.	
Strategies	Park
Collaborate with CMAs and Environmental water holder to review waterway strategies and develop Ramsar Action Plans.	Gunbower Forest, Hattah–Kulkyne Lakes, Kerang Wetlands
Investigate and implement management options for controlling carp or mitigating carp impacts in the wetlands in alignment with the release of the carp herpes virus.	Gunbower Forest, Hattah–Kulkyne Lakes, Kerang Wetlands
Undertake fox and cat control measures when required (e.g. if bird breeding is observed) using an appropriate scale and methodology depending on the level of cross-tenure support.	Gunbower Forest, Hattah–Kulkyne Lakes, Kerang Wetlands
Undertake feral pig and goat control measures as required if determined to be an active threat to ecological values.	Gunbower Forest, Hattah–Kulkyne Lakes, Kerang Wetlands
Undertake culturally sensitive rabbit control measures.	Gunbower Forest, Hattah–Kulkyne Lakes, Kerang Wetlands
Implement pest plant control program to reduce the extent of high threat terrestrial and aquatic weeds as required.	Gunbower Forest, Hattah–Kulkyne Lakes, Kerang Wetlands
Undertake annual environmental water planning and prioritisation and delivery according to regional and state-wide seasonal watering plan processes (for Regulated Freshwater Intermittent Wetlands).	Gunbower Forest, Hattah–Kulkyne Lakes, Kerang Wetlands
Address the key threats facing this ecosystem, which are detailed in Table 6.4, section 6.2 and Chapter 5.	Gunbower Forest, Hattah–Kulkyne Lakes, Kerang Wetlands

Dry Forests and Woodlands Natural Ecosystem

The Dry Forest and Woodlands Natural Ecosystem includes Mixed Dry Forest, Box–Ironbark Forest, Plains Woodland and Semi-arid Woodland sub-ecosystems, covering about 15.4% of the total planning area. Table 6.4 lists the parks with the largest areas of these sub-ecosystems. This ecosystem is in fair to good condition in the parks and generally stable. Only a small proportion is within the Conservation Zone. The dry forests and woodlands are relatively tolerant of fire, which is one of the key drivers of this ecosystem (section 6.4).

Table 6.5: Dry Forests and Woodlands Natural Ecosystem in the River Red Gum Parks.¹

Sub-ecosystem	Reserve	Area (ha)
Box–Ironbark Forest	Warby–Ovens National Park	3220
Mixed Dry Forest	Warby–Ovens National Park ²	8123
	Murray–Sunset National Park	350
	Kings Billabong Park	275
Plains Woodlands	Gunbower National Park ²	1260
	Lower Goulburn National Park	818
	Murray River Park (proposed)	413
	Warby–Ovens National Park	164
Semi-arid Woodland ¹	Murray–Sunset National Park	10761
	Hattah–Kulkyne National Park	6548
	Murray River Park (proposed)	683

¹ Semi-arid Woodland is not included in this management plan because it will be covered comprehensively by the Mallee Parks Management Plan.

² Parks with more than 100 ha of high conservation significance (Greening Australia 2014).

The **Mixed Dry Forest Sub-ecosystem** consists of eucalypt forest with a low grassy or shrubby understorey, and occurs on a range of soil types. Areas of high conservation significance are mainly in the Warby–Ovens and Murray–Sunset national parks. The sub-ecosystem is important for a number of rare and threatened species, including the Carpet Python, Red-naped Snake, Superb Parrot, Regent Parrot, Mueller’s Skink, Three-veined Wattle and Hairy Darling-pea. Many flora and fauna species dependent on this habitat are declining.

Goals

The diversity and distribution of vegetation growth stages of mixed dry forest is maintained and enhanced to support flora and fauna species dependent on this habitat.

Strategies to address the key threats facing this ecosystem are detailed in section 6.2.

The **Box–Ironbark Forest Sub-ecosystem** is confined to relatively poor soils in the far east of the planning area, in Warby–Ovens National Park and some small reserves. Various eucalypt species are extremely important nectar sources for many migratory birds, including the Superb Parrot. The understorey is mostly open and shrubby, and herbs and grasses may also be present. Only a small area of this sub-ecosystem has a high conservation value in the River Red Gum Parks. Significant species include the Superb Parrot and Rugose Toadlet. A number of bird species and other fauna dependent on this habitat are declining.

Goals

The diversity and distribution of vegetation growth stages of Box–Ironbark forest is maintained and enhanced to support bird and other fauna species dependent on this habitat.

Strategies to address the key threats facing this ecosystem are detailed in section 6.2.

The relatively small areas of Plains Woodland Sub-ecosystem consist of open woodland dominated by eucalypts and Buloke up to 15 m tall, mostly on low-rainfall sites with low soil fertility. The ecosystem is very localised, mostly in the eastern part of the planning area, although there are important occurrences in Gunbower National Park, Lower Goulburn National Park and Murray River Park (proposed). The woodland includes three FFG-listed communities (Creekline Grassy Woodland, Grey Box – Buloke Grassy Woodland, and Northern Plains Grassland) and one nationally threatened community (Buloke woodlands of the Riverina and Murray–Darling Depression bioregions). It also supports numerous threatened species, including Murray Cod, Diamond Dove, Major Mitchell’s Cockatoo, Rugose Toadlet, Wavy Marshwort and Wedge Diuris. Plains woodlands are impacted by most of the threats affecting the Riverine Forest and Woodland Sub-ecosystem, and are managed as part of those areas.

Goals

The condition of plains woodland is maintained and enhanced to support dependent flora and fauna species. The extent of ground cover and coarse woody debris is enhanced.

Undertake habitat restoration of Plains Woodlands, including re-vegetation via plantings and direct seeding to re-introduce characteristic plant species that are absent or at critically low densities.

All

Strategies to address the key threats facing this ecosystem are detailed in section 6.2.

6.2 Priorities for environmental management

This management plan, together with a conservation action plan being developed for the River Red Gum Parks (Parks Victoria 2017a), focuses on adaptive management, specifying goals for key values and using a risk-to-values based approach to determine key threats (table 6.6) and strategies that address conservation priorities to achieve ecosystem conservation goals.

Many areas are still recovering from past uses, such as logging and stock grazing, following their transfer from state forest or other categories of public land to the parks and reserves system. Drought and flood events in the last 20 years have affected large areas of the parks. Changed flooding regimes are leading to dense Red Gum sapling invasion into treeless wetlands, sandbanks and riverbank visitor areas. A range of management strategies to manage the overabundant saplings, including ecological thinning, are being investigated (chapter 9). Table 6.5 summarises the key threats to the ecosystems and natural values. Other concerning threats to the parks' ecosystems and biodiversity include fragmentation of habitat; soil erosion caused by introduced animals; impacts from recreation, including camping and campfires and illegal activities such as off-road driving, rubbish dumping and firewood removal (section 7.3); and, disturbance to catchments (chapter 5). Climate change is likely to exacerbate many of these threats and could fundamentally change the parameters for the survival of communities and species. While many aspects of the ecological condition of the riverine and Box–Ironbark forests of the River Red Gum Parks are reasonably well understood, there are knowledge gaps that need to be filled to help improve their adaptive management (chapter 9).

There are eight priorities for environmental management. Together, these priorities give the best mix of threat treatments to achieve multiple goals across all or most of the River Red Gum natural ecosystems. These priorities aim to halt the decline and build resilience, and will inform decisions about resource allocation to achieve the best outcomes for the parks at the scale required with the available resources:

- 1 improving the health of wetlands and other water-dependent ecosystems through restoring **natural flows** and delivering **environmental water** by managing inappropriate timing frequency, duration, depth and extent of water inundation in regulated areas (see chapter 5 Water for Country)
- 2 maintaining appropriate **fire regimes** (see section 6.4 Fire management)
- 3 **reducing total grazing pressure** (from rabbits, kangaroos, goats, pigs, deer, and wandering and feral stock)
- 4 reducing **aquatic pest** impacts
- 5 improving terrestrial **predator control** (foxes and cats)
- 6 reducing **weed** invasion and impacts
- 7 **partnering** to integrate programs and address key knowledge gaps (see section 8.2 and chapter 9)
- 8 supporting **habitat restoration** programs and recovery of **priority threatened species** (Appendix 5).

Priority areas for environmental management are conservation zones, Ramsar wetlands, habitats with populations of rare or threatened species, and the areas subject to environmental and cultural watering programs. It is critical to align complementary environmental management to maximise the benefits from the significant investment in water delivery that supports the condition and resilience of biodiversity at priority environmental sites. These priority environmental sites for environmental management include the 'icon sites' under the Living Murray program and the seven sites

which are part of Victoria’s Sustainable Diversion Limits projects including at Lindsay Island, Wallpolla Island, Hattah Lakes, Belsar–Yungera, Burra Creek, Vinifera and Nyah.

Priorities for specific parks are listed below and in appendix 2. In addition, areas within defined visitor experience areas are a priority for managing the impacts of visitor uses and illegal activities, particularly where VEAs occur within conservation zones (maps 2–13).

Table 6.6: Key threats to the Natural Ecosystems and Ramsar sites (Parks Victoria 2017) .

Threat	Riverine Forest and Woodland	Ephemeral Freshwater Wetlands	Permanent Freshwater Wetlands	Saline Wetlands	Ramsar Sites	Plains Woodland	Mixed Dry Forest	Box-ironbark Forest	Overall Threat Rating
% area of planning area*	54%	8%	3%	<1%	12%	2%	4%	>1%	
Inappropriate hydrological regimes	Ext	Ext	Ext	Ext	Ext	Ext	Ext	Ext	Ext
Inappropriate fire regimes	Ext				Ext	Ext	Ext	Ext	Ext
Illegal activities	Ext	High	Ext	Ext	Ext	Ext	High	High	Ext
Total terrestrial grazing, browsing and trampling pressure	Ext	High	Ext	Ext	Ext	Ext	High	Mod	Ext
Total aquatic grazing and predation pressure (invasive species, livestock and kangaroos)	Ext	High	Ext	Ext	Ext				Ext
Terrestrial predation	High	High	High	Mod	High	High	High	High	High
Weed invasion	High	High	High		High	High	Mod	Mod	High
Habitat fragmentation	High					High	High	High	High
Removal of woody debris and firewood	High				High	High	High		High
Pathogen and disease (phytophthora, myrtle wilt/rust)						High	High	High	High
Physical disturbance (to populations and/or habitats)	Low	High	High		Mod	Mod	Low	Low	Mod
Extreme weather events	High						Mod	Mod	Mod

* Mallee and Semi-and Woodland Natural ecosystems not included.

Reducing total grazing pressure

Goal	
Reduce total grazing, browsing and trampling pressure to a level that allows for regeneration of key ecosystem species by effective and integrated control programs for rabbits, kangaroos, goats, pigs, deer and feral cattle.	
Strategies	Park
Use culturally sensitive, safe and humane methods of control.	All
Rabbits	
Reduce rabbit populations in sandy rises, riverine areas and conservation zones and priority areas for aboriginal Heritage conservation. Consider using alternative rabbit control methods to prevent impact on Aboriginal cultural values.	Murray–Sunset and Hattah–Kulkyne NPs, Murray–Kulkyne Park, proposed Murray River Park, Kings Billabong Park, cultural sites in Lower Goulburn and Gunbower NPs, Kerang Wetlands and nearby SGRs, Nyah-Vinifera,
Coordinate programs with CMAs to reduce rabbit densities.	Ramsar sites, Baillieu Lagoon WR, Nyah-Vinifera, Kerang Wetlands
Monitor effectiveness of ongoing broad-scale rabbit control programs.	All
Kangaroos	
Reduce densities to less than specified target levels (Parks Victoria 2017b) to allow regeneration of saplings and shrubby species.	Murray–Sunset NP, Hattah–Kulkyne NP
Goats	
Eradicate small and isolated goat populations.	Gunbower NP, Gunbower Forest Ramsar site, Lower Goulbourn NP, Warby–Ovens NP, Gadsen Bend Park, Bumbang Is HA and proposed Murray River Park
Reduce goat population densities to levels that allow regeneration of saplings and shrubby species.	Hattah–Kulkyne NP, Hattah–Kulkyne Lakes Ramsar site, Murray–Sunset NP and proposed Murray River Park
Pigs	
Reduce pig population densities.	Ramsar and Living Murray Icon Sites including in Murray–Sunset NP, Kings Billabong Park, Bottle Bend, proposed Murray River Park, Lambert Island NCR, Gadsen Bend Park, Bumbang Island HA, Gunbower NP, Nyah-Vinifera
Eradicate small or satellite pig populations.	Lower Goulburn NP, Warby–Ovens NP and proposed Murray River Park
Deer	
Reduce Fallow Deer population densities.	Areas east of Gunbower, Gunbower Forest Ramsar site
Contain and where possible eradicate Red Deer populations.	See appendix 2. Ramsar sites and treeless wetlands of Gunbower NP, Lower Goulburn NP, Lambert Island NCR, Lower Ovens WR
Contain Sambar populations west of and including Gun Bower Forrest. Reduce Sambar population densities east of Gunbower Forest particularly river corridors along the Lower Ovens, Lower Goulbourn and Murray River.	Gunbower Forest Ramsar site

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Feral horses, Barmah Island

Strategies	Park
Feral cattle	
Eradicate feral cattle.	Lindsay Island (Murray–Sunset NP), proposed Murray River Park
Maintain fence at Tarpaulin Bend Reference Area to exclude domestic stock encroaching from New South Wales.	Murray–Kulkyne Park
Feral Horses	Barmah Island
Remove feral horse population.	
Restoration	
Following reduction in grazing pressure, support restoration of understorey species along river frontages.	Conservation zones

Reducing aquatic pest impacts

Goal	
Reduce the impacts of invasive aquatic pests to levels that allow for improvements in ecosystem values where control methods are available.	
Strategies	Park
Investigate the use of biocontrol mechanisms to reduce carp populations.	All waterways and wetlands
Coordinate work with CMAs and adjacent land managers to control, contain or locally eradicate aquatic pests and to promote the use of Carp screens at strategic locations to prevent their movement into carp-free areas.	All
Investigate the development and potential implementation of the National Carp Plan.	All waterways and wetlands

Improving terrestrial predator control

Goal	
Reduce the impact of fox and cat predation at key locations to allow for an increase in the extent and richness of vulnerable fauna, and occupation of most of their potential habitat.	
Strategies	Park
Fox	
Support CMAs, key agencies and adjoining land managers to establish effective large-scale cross-tenure programs to reduce fox populations to levels that minimise predation on vulnerable species such as waterbirds and Broad-shelled Turtle.	All, including Ramsar sites
Maintain targeted fox control programs to protect vulnerable species and breeding sites, including Broad-shelled Turtle, Broilga, colonial nesting birds, Bush-Stone Curlew and pythons.	Ramsar sites, Living Murray Icon Sites, watering sites, Murray–Sunset, Gunbower & Warby–Ovens NPs, Lower Goulburn NP, Gemmill Swamp NCR, Kanyapella Basin WLR and Koorangie WR
Partner with hunting organisations and volunteer hunters to implement authorised, targeted programs for ongoing fox control.	Small natural features reserves, Kerang Wetlands
Investigate establishing exclusion fencing for large-scale fox, cat and introduced herbivore exclusion areas to improve recovery of native species and future rewilding programs.	Hattah–Kulkyne NP
Cat	
Trial targeted cat control to protect vulnerable species and breeding sites, including targeted baiting when techniques become available.	Ramsar sites, Living Murray Icon Sites, watering sites, Murray–Sunset, Gunbower & Warby–Ovens NPs, Lower Goulburn NP, Gemmill Swamp NCR, Kanyapella Basin WLR and Koorangie WR

Reducing weed invasion and impacts

Goals	
Eradicate new and emerging weeds, control established high priority weeds to acceptable levels where key species or communities are at risk, and contain pathogens.	
Strategies	Park
Respond rapidly to prevent new infestations, particularly by aquatic weeds, with close collaboration with DELWP, Department of Economic Development, Jobs, Transport and Resource (DEDJTR), CMAs and adjoining landowners, and improve boundary biosecurity to:	All, including Ramsar sites
<ul style="list-style-type: none"> prevent Cabomba 	Lower Goulburn NP
<ul style="list-style-type: none"> contain Arrowhead following disturbance from flood 	Lower Goulburn NP, Warby–Ovens NP. Barmah Island, Ramsar sites
<ul style="list-style-type: none"> prevent Buffel Grass (on roadsides invading from north-west) 	All

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Strategies	Park
<ul style="list-style-type: none"> • contain Chilean Needle-grass (invading from north-east) • eradicate Thorn Apple • contain Thorn Apple • work with all CMA and shires to eradicate new and emerging weeds, including Buffel Grass, Gazania and Willow. <p>Reduce, eradicate, or contain where possible, weeds newly establishing after floods, environmental watering and other disturbance events.</p>	<p>proposed Murray River Park, Lower Goulburn NP, Warby–Ovens NP</p> <p>Murray–Kulkyne Park, Gunbower NP</p> <p>Murray-Sunset and Hattah NP</p> <p>All</p> <p>Sandbars and beaches, proposed Murray River Park</p>
<p>Contain and reduce, and where possible eradicate, existing weeds, such as Prickly Pear, African Box-thorn, Olives, Briar Rose, Pepper tree, willow, Devils Rope, blackberry, Noogoora and Bathurst Burr, Slender and Serrated and Saffron Thistle, Flaxleaf Fleabane, Horehound, Crowbeard, False Caper, Golden Dodder and Hairy Fiddleneck and Bridal Creeper from areas where they are threatening high conservation or cultural values.</p>	<p>All</p>
<p>Contain and reduce the following existing weeds: Bathurst Burr, Paterson’s Curse, Horehound, St John’s Wort, Blackberry, Arrowhead, Noogoora Burr, Crowbeard, Spiny Emex, and Caltrop.</p>	<p>Ramsar sites</p>
<p>Reduce the following overabundant native flora species:</p> <ul style="list-style-type: none"> • Phragmites, Cumbungi and Giant Rush • River Red Gums invading areas naturally devoid of, or with only low densities of, woody vegetation 	<p>Kerang and other wetlands, creeks, sandbars and beaches, proposed Murray River Park, Hattah–Kulkyne NP</p>
<p>Eradicate plantings of non-indigenous trees and shrubs that have no heritage significance.</p>	<p>All</p>
<p>Coordinate with CMAs and Murray Valley Water to:</p> <ul style="list-style-type: none"> • control Willows and other priority weeds, and Red Gum in littoral zones and saplings affecting significant values • control, contain or locally eradicate aquatic weeds • limit Cumbungi in permanent wetlands and pools • use water flows to remove understory weeds. 	<p>High-value areas including Ramsar sites and key visitor sites</p>
<p>Liaise with Agriculture Victoria to support containment using ongoing persistent biological control of Bridal Creeper and Common Prickly Pear.</p>	<p>Hattah and Gunbower Ramsar sites, proposed Murray River Park, Kings Billabong Park, Murray–Kulkyne Park, Lower Goulburn NP, Gadsen Bend Park</p>
<p>Pathogens</p> <p>Contain <i>Phytophthora cinnamomi</i> and other pathogens to infected areas (Curtis 2007) and use approved management protocols.</p>	<p>Warby–Ovens NP</p>

Partnering with Traditional Owners and other land managers to integrate programs

Goals	
Strong strategic partnerships with Traditional Owners, other land managers, agencies and authorities improve adaptive management, program effectiveness, and ecosystem and habitat connectivity, and reduce fragmentation.	
Strategies	Park
Actively recognise the value of environmental information, knowledge and expertise held by Traditional Owners, and partner with Traditional Owners to enhance environmental management, education about natural values and associated cultural benefits.	All
Work with partners to use climate science to inform adaptive management and programs, to ensure flexible and effective responses to emerging threats. Identify and protect areas that can act as climate change refugia.	All
Work with Traditional Owners, park neighbours and agency partners in a landscape approach to kangaroo management.	Murray–Sunset NP, Hattah–Kulkyne NP
Cooperate with neighbouring landholders to manage weeds, pest animals and other major threats to private and public land, and in relation to any other management actions that may affect them.	All
Increase collaboration with other land managers to improve cross-tenure management and efficiencies in program delivery and ecosystem and habitat connectivity including: <ul style="list-style-type: none"> with adjacent landowners on revegetation and habitat restoration following grazing removal on the reintroduction of Murray Hardyhead and aquatic vegetation. 	All Gunbower and Lower Goulburn NPs, prop. Murray River Park (near Wodonga), Lake Elizabeth WR
Liaise with the Sporting Shooters Association of Australia, Field and Game Australia and other hunting organisations to assist with authorised control programs of feral predators and grazing animals.	All Small natural features reserves, Kerang Wetlands

Supporting habitat restoration and threatened species recovery

Goal	
Support the recovery of priority threatened fauna species and restoration of priority threatened flora species through active management intervention to improve ecosystem health and ecological integrity.	
Strategies	Park
Support DEWLP in the threatened species recovery program for priority species.	All
Partner with DEWLP & CMAs in monitoring environmental outcomes including reintroduction of aquatic species post carp virus.	All
Undertake habitat restoration of Plains Woodlands, including re-vegetation to re-introduce characteristic plant species that are absent or at critically low densities.	All
Support DELWP and Birdlife Australia to monitor and protect threatened migratory birds within the landscape.	All
Explore opportunities for carbon sequestration programs that promote ecosystem and ecological benefits.	All

The Murray Cod

The Murray Cod, *Maccullochella peelii peelii*, is the iconic fish of the Murray–Darling river system. Its Aboriginal names include *Goodoo* and *Pondi*. It is the largest Australian freshwater fish: individuals over one metre long are sometimes caught by recreational anglers, and there are historical newspaper reports of fish more than 1.8 metres long and weighing over 100 kg. However, most fish are well under a metre long and weigh less than 20 kg.

Although it ranges throughout the Murray–Darling system, the Murray Cod is most common in the Murray River and its Victorian tributaries. It is a predatory fish, feeding on other fish, molluscs, freshwater turtles, and small birds, mammals and reptiles, as well as macroinvertebrates. Adult fish are sedentary for long periods but may make extended excursions of 200 km or more. Eggs undergo a 12-day critical development period during which they are highly susceptible to elevated salinity levels (over 340 mg/L).

The Murray Cod was very common in the Murray–Darling system before the arrival of Europeans. Because of its size and edibility, it was a prized catch, along with Trout Cod and other native fish. The collapse of the Murray Cod fishery is one of the earliest, least known and most dramatic examples of poor natural resource management in Australia's history (VEAC 2006). It is estimated that between 40 000 and 150 000 kg of Murray Cod had been taken from the Murray by commercial fishers by the late 19th century. By 1928, around 1300 commercial fishers were operating on the river, but by the 1930s catches had declined to the point where the fishery was not viable, prompting government commissions of inquiry.

Stocks may have recovered over the next two decades, but between 1955 and 1980 numbers declined significantly, probably because of widespread river regulation for irrigation, de-snagging, and the loss of riparian vegetation. In Victoria and New South Wales, the legal catch size for Murray Cod is a 'slot' length limit from 55 to 75 cm, with a bag limit of two in lakes and one in rivers. The slot limit aims to increase the survival of more large fish, increasing spawning, and recruitment, as well as allowing more small fish to mature to a reasonable size, creating a more natural age class distribution. A closed season applies in the planning area from 1 September to 30 November, inclusive, covering most of the breeding season.

The Murray Cod is listed as critically endangered by the IUCN and as vulnerable under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1990*. Artificial restocking may give a false impression of a healthy population size, but the current population is estimated to be only about 10% of the pre-European population. Threats include predation of juvenile fish by the introduced species, sudden large releases of cold, deoxygenated water from storage dams, post-hooking mortality of larger photographed fish, and the accidental introduction of diseases. Regulators affect their habitat and favour Carp. More than one-third of fish stranded behind regulators were found to suffer from ulcers, lesions or parasites, compared with none in an unregulated stream.

A recovery plan for Murray Cod was developed in 2010 with the aim of restoring self-sustaining populations throughout the Murray–Darling system. A target of 60% of pre-European numbers by 2060 was set in the plan. Research into the ecology and biology of the species is also being undertaken. Current projects include establishing fish pathways from Lake Hume to the sea, which will provide data on the impact of free passage on population numbers.



Billabong in the proposed
Murray River Park

6.3 Landscape and geological features

The landscapes of the planning area have long been recognised as valuable and requiring protection. The River Red Gum Parks form a characteristic feature in the predominantly flat landscape within the broad Northern Riverine Plain, presenting an often sinuous line of dense tree cover snaking across the landscape with the rivers. From the far west along the River Murray in Murray–Sunset National Park, the riverine plain extends to the western and eastern uplands of the Great Dividing Range. It can be divided into major alluvial terrace and floodplain-filled troughs of the Goulburn and Murray rivers, a plain crossed by paleo-channels and modern rivers such as the Loddon, and the uplands in the east (VEAC 2006).

The Warby Range is the major landscape feature between the Great Divide and the vast inland plain, particularly for travellers passing on the Hume Freeway. The peaks of Warby Range increase in height from north to south: Mount Killawarra (300 m), Mount Warby (480 m) and Mount Glenrowan (514 m). Warby–Ovens National Park provides spectacular views of surrounding and distant countryside (ECC 2001), including some of the best views of the Victorian alpine country and the Ovens, King and Murray river valleys.

Immediately visible across the flat agricultural plains that surround them, a mosaic of forest types reveal the true variety of the River Red Gum forests and the subtle nuances of the landscape with all its myriad features (Context 2014 vol. 2). Across this landscape is a concentration of lake and lunette systems, such as the iconic Hattah and Kerang lakes.

Three landscape assessment studies by DELWP in 2015 for the Lower Murray, Central Murray and Goulburn Murray, and Upper Murray identified many landscapes and views within the planning area as visually significant, including:

- Chowilla Floodplains and Lindsay, Mulcra and Wallpolla islands; Murray–Sunset National Park and Hattah–Kulkyne National Park; Gunbower National Park; part of the Murray River corridor in proposed Murray River Park (state significance)
- Kings Billabong Park (and Red Cliffs in particular); Kerang Lakes; Leaghur State Park; Lower Goulburn National Park; Kanyapella Basin (Kanyapella WR); Warby–Ovens National Park (regional significance).

The flat or gently undulating landscapes are significant to different people for different reasons. Individuals and groups have special and long-standing associations with landscapes and places. The cultural importance that landscape features hold for Traditional Owners is increasingly being recognised (chapter 4). Many features of thousands of years of occupation and management of Country can still be found within these diverse landscapes. The meanders of the Murray River are well developed and relatively unaltered by European settlement (VEAC 2006). Human influences are evident, however, particularly in the surrounding contrasting landscapes (Context 2014).

The underlying geology of the landscape consists of both sedimentary and volcanic rocks subsequently overlain by alluvium sediments. The predominantly flat floodplain dominates the character of the River Red Gum Parks with the exception of the low, granitic hills of the Warby Range, which run parallel to the Ovens River. A study of sites of geological or geomorphological significance commissioned by VEAC identified many previously undocumented sites relating to river and floodplain geomorphology (VEAC 2008). Most of the sites of high significance are included in the River Red Gum Parks. The most significant sites include:

- Lindsay Island floodplains, consisting of scroll plains, an anabranch and channels (nationally significant): Murray–Sunset National Park
- Hattah Lakes (nationally significant): Hattah–Kulkyne National Park
- Olney Bore Eocene to Miocene type section (state significance)
- Wallpolla Island and Creek anabranch and floodplain (state significance): Murray–Sunset National Park
- Kanyapella paleo-lake (state significance): Kanyapella area
- junctions of the Murray with the Ovens and Goulburn rivers (regional and state significance)
- Lake Moodemere.

Other significant features include seasonal waterfalls, such as Pine Gully and Briens Gorge (Warby–Ovens National Park), the crescent-shaped lunettes (dunes) fringing lakes and meander belts of rivers, such as at Lake Wallawalla (Murray–Sunset National Park). Some of only a few in Victoria, lunettes contain a record of past water levels and climates, and many are important cultural sites and may contain Aboriginal artefacts or burials. Lunettes are prone to wind and water erosion following disturbance, and these dunes attract illegal off-road driving and riding, which have devastating impacts on Aboriginal heritage sites.

Landscape values can be affected by inappropriate activities and development, particularly river and wetland views, and by bushfires, storm damage and erosion. Erosion of the River Murray banks, evident in many areas, is exacerbated by altered flooding regimes and wash from water and jet skiing and boating activities (sections 6.1 and 7.1). Geological features can be affected by erosion, invasive species including Red Gum saplings and vegetation loss. These threats are expected to be exacerbated by climate change, intensive and inappropriate recreation, and other activities. Significant features may be exposed in road or track cuttings, where they are prone to unintentional damage during maintenance works. Public access to some river and other areas may need to be changed and restricted to protect significant features (chapter 8). Collecting rocks and fossils is not permitted in parks and many reserves.

Goal	
The River Red Gum Parks landscapes and geological features are preserved and protected from avoidable damage.	
Strategies	Park
Work with local government and other land managers, user groups and the community to protect and manage impacts on landscape and geological features and view sheds, especially along rivers and wetlands.	All
Work with user groups and the community to manage access; ensure recreation has a minimal impact; ensure visitors are aware of key features and values; and, improve monitoring of impacts from recreation and other activities on significant landscape and geological features.	All
Mitigate the impacts from large-scale events, such as bushfire and flood, as soon as practicable.	All
Prevent vehicle access to lunettes and other dunes and rehabilitate eroded lunettes and dunes, particularly in areas where further disturbance could affect cultural values.	Murray–Sunset NP, Hattah–Kulkyne NP, Murray–Kulkyne Park, Lower Goulburn NP, Gunbower NP, Gemmill Swamp NCR, Baillieu Lagoon WR, Kerang Lakes WR and proposed Murray River Park
Monitor the condition of visitor areas, including viewing points, roads and tracks, and implement management and maintenance activities to prevent and address erosion.	Murray–Sunset NP, Warby–Ovens NP, proposed Murray River Park
Consider and respect the significance of landforms and features to Traditional Owners in planning and implementing management activities (sections 4.1 and 6.3).	All
With CMA s and Murray Valley Water, review and remove unnecessary water infrastructure on significant landscape values and features and priority VEAs (chapters 6 and 7).	All
Work with research partners and specialist organisations to improve management and document significant geological and landscape features.	All
Use climate change science and modelling to inform management and direct management responses to environmental threats.	All

Goal	
Strong partnerships with Traditional Owners and broader community connections improve protection of cultural landscapes and features.	
Strategies	Park
Work with, and increase involvement of, the Traditional Owners in identifying, protecting and, where appropriate, interpreting landscape and geological features.	All
Work with agencies, user groups and communities to increase awareness and respect for cultural landscape and geological features, and their connections with Traditional Owners (section 4.1).	All
Investigate renaming features to acknowledge Traditional Owners’ connections.	All
Work with Traditional Owners and encourage research to identify landforms and features of special significance to the Traditional Owners, and protect them from damaging or inappropriate activities (sections 4.1 and 9.1).	All

Climate change

“Preserving biodiversity ‘as is’ may have been feasible in a stationary climate (one that is variable but not changing), but this will not be possible with the widespread, pervasive and large ecological changes anticipated under significant levels of climate change. This makes the impacts of climate change quite unlike other threats to biodiversity.”

—Dunlop et al. (2013)

All regions of Victoria are facing challenges from a changing climate. The Victorian Government, through its *Victorian Climate Change Adaptation Plan 2017–2020* recognises the serious threats posed by climate change.

Evidence of slow-onset changes has been mounting for several decades, and extreme weather events are intensifying. The most concerning of these are heatwaves and subsequent bushfires, heavy precipitation and more frequent severe weather. Climate change is increasing bushfire risk and lengthening the average fire season in Victoria. Projections indicate that Victoria is likely to have up to 70% more Severe, Extreme and Code Red days by 2050 (DELWP 2015c). Expected increases in average temperature, with more very hot days, reduced average rainfall and fewer rainfall days (with heavier rainfall), may lead to very large changes in the intensity of extreme events. Storms and fires over the past decade have already led to changes in the management of parks and surrounding public land in Victoria. Management interventions that were once periodic have become part of ongoing operations. Park closures are becoming increasingly necessary during extreme events. Park facilities are being affected, particularly roads, walking tracks and visitor facilities in bushfire-prone areas, and coastal infrastructure.

A state-wide risk assessment highlighted five key risks for parks and reserves in Victoria (Parks Victoria 2010):

- increased bushfire with fire regime changes, increasing emergency management demands, asset loss and tourism disruption
- increased flood and storm impacts, increasing emergency management demands, asset loss and tourism disruption
- hotter, drier conditions for recreation
- increased and generalised ecosystem stress with new weeds and pests, changes in species’ geographic range, and altered flowering seasons
- increased financial and economic costs, and impacts on organisational effectiveness.

Inland Waters and Wetlands and Dry Forests and Woodlands are two of four Victorian natural ecosystems most at risk from the effects of climate change. Inland waters and wetlands are already stressed because of declining water quality and increasing salinity. The loss of ephemeral waterways and wetlands would increase the pressure on aquatic and amphibious species and communities, and a decline in the quality and volume of Ramsar wetlands would change the ecological character of these areas and render them less habitable for migratory birds.

Other expected consequences of climate change, with a medium to high risk, are acidification of soils, increased eutrophication with associated algal blooms, reduced flows and standing water levels, increased pressure from illegal fishing, increased peak flows and flooding, and increased aridity and availability of vegetation across the landscape, and reduced catchment yields and maintenance of upstream diversions.

River Red Gum and Black Box stands have suffered a significant decline in condition because of a lack of water, caused by combination of below-average rainfall and continuing regulation and water extraction (MDBC 2003, Cunningham et al. 2009).

A hotter and drier climate and increased fire risk may affect the abundance and distribution of woodland bird species, which are already undergoing a major decline in that ecosystem. Climate change is likely to alter the attributes and availability of habitats, and magnify loss of habitat, such as hollow-bearing trees, and existing threats, including fragmentation and spread of invasive species (DELWP 2015c).

With a changing climate, many existing environmental weeds and pests may move into areas from which they are currently excluded, and invasions by new pest species may increase. Control of invasive species is costly and difficult, particularly of highly reproductive species and in remote areas; however, this will become increasingly important.

A decrease in water availability may also increase tourism and recreation pressure in parks and reserves where water levels and flows remain relatively high. Access may be easier, and seasonal road closures might be shorter. On the other hand, higher inland temperatures and fire risk may encourage people to avoid the River Red Gum Parks in favour of coastal or mountain destinations.

Carbon sequestration within the River Red Gum forests

According to the Australian Government and published by the Chief Scientist 'carbon dioxide is an important greenhouse gas' which has a direct impact on climate change. One strategy that can partially combat global warming and climate change is to increase the amount of carbon stored in plants. (Scurlock et al. 2002).

'Scientists call anything that removes carbon from the atmosphere a 'sink'. In order to be effective in combating climate change, the sink must be large and the carbon must stay in the sink. So what is important for climate change is not the amount of carbon exchanged between the atmosphere and plants, but how much carbon stays in the total forest and total grassland "sinks" ' (Australia's Chief Scientist 2018).

The amount of carbon taken up every year by dry forests in Australia depends on the weather conditions and age of the trees. Science tells us that the range for forests with continuous canopies is about 0.5 to 2 tonnes of carbon per year for each hectare.

The River Red Gum forests represent a significant component of the overall Australian carbon sequestration 'footprint' as well as being a very significant 'sink' for carbon in its own right. The Co-operative Research Centre for Greenhouse Accounting has estimated that Australian forests store about 10.5 billion tonnes of carbon (excluding soil carbon). This store of solid carbon has accumulated over an assumed life of 100 years for native regrowth. That translates to our forests storing an amount of carbon equivalent to almost 38.5 billion tonnes of gaseous carbon dioxide from the atmosphere, about 70 times Australia's annual net greenhouse gas emission (Australian Government Chief Scientist, 2018).

The protection and effective management of the River Red Gum forest is therefore important, not just to interested stakeholders and users groups, but also the wider community within the context of efforts to limit climate change through measures such as carbon sequestration through forest protection and associated biodiversity benefits.



Bushfire suppression in River Red Gum forest

6.4 Fire management

Fire is a natural process in most Australian ecosystems, and south-eastern Australia is one of the most fire-prone areas in the world. The frequency, timing and extent of fire from lightning strikes, as well as Aboriginal burning practices over 50 000 years, have shaped the ecology of many species and vegetation communities. In this landscape, the dry forest and woodlands of the foothills are well adapted to, and tolerant of, appropriate fire regimes. However, the River Red Gum riverine forests and wetlands across the floodplains depend largely on flooding for regeneration, and are in fact considered to be sensitive to fire.

DELWP is responsible for managing bushfire risk on Victoria's public land in accordance with the *Code of Practice for Bushfire Management on Public Land* (DSE 2012). Fire management focuses on working with the community as a priority to deliver an integrated fire management program across public and private land. Parks Victoria is a partner agency to DELWP, supporting them to deliver the fire management program across all the areas of strategic fire management; from planning strategic fire management programs, to preparing for and responding to bushfires, to working on recovery from the impacts of bushfires and fire management activities. The National Parks Act 1975 also requires that appropriate measures are taken to protect parks from impacts of fire.

DELWP plans and delivers a fuel management program, supported by Parks Victoria, across seven bushfire risk landscapes across Victoria, of which two — Alpine and North East (Warby-Ovens National Park) and Mallee and Murray Goulburn (most of the planning area) — cover the planning area (DELWP 2015b, c).

DELWP uses a strategic risk-based approach to bushfire management planning. Bushfire modelling is used to quantify the risk bushfires pose to human life and property and ecological and other values across the landscape. Appropriate fire management differs across the landscape depending on risk mitigation needs and the habitat and growth stage needs of native flora and fauna. Strategic fire management aims to integrate risk mitigation strategies with ecological and cultural management to manage all fire in the landscape, reducing the risk of bushfire affecting life and property assets, and achieving environmental and cultural outcomes.

In preparing for bushfire emergencies, Parks Victoria works with DELWP, communities and Traditional Owners to ensure parks and reserves are adequately prepared for bushfires. Across the planning area, Parks Victoria develops and contributes to various plans and planning processes, including the fire operations planning processes. These schedule locations of fuel management programs that reduce fuel levels (including planned burning, mechanical fuel treatments such as slashing and mowing, and firebreak maintenance), maintain fire access road and track networks, employ project firefighters, and undertake compliance, educational and interpretive activities to inform the community about fire risks.

Parks Victoria staff have important roles in maintaining rapid response capabilities and responding to bushfire emergencies with surveillance, ground patrols, fire-suppression vehicles, supporting incident management teams, and closing parks for public safety.

In bushfire-affected areas, Parks Victoria works with partner agencies to support the recovery of regional communities, identify priorities for re-establishing access to public land in a timely and safe manner, and support the long-term recovery of natural and cultural values. The rehabilitation of suppression works (such as control lines) and the repair or reconstruction of damaged facilities commence as soon as practicable after a bushfire.

Parks Victoria works with DELWP to better understand the best places to manage fuel and improve the management of areas that support fire-sensitive threatened species and communities (DELWP 2015b, c), and to develop tools that guide environmental and culturally sensitive implementation of planned burning and suppression tactics in sensitive areas.

Both cultural and high-value ecological sites are key considerations in managing fire in the landscape:

- The River Red Gum landscape has thousands of Aboriginal cultural sites and values, including ceremonial gathering places, shell middens, ancestral burial sites, scar trees and artefact scatters, and probably many more are yet to be found.
- Targeted planned ecological burning may be a tool for reducing the encroachment of River Red Gums into grasslands and controlling or eliminating invasive plants such as Giant Rush, especially when conducted immediately before flooding so that plants germinating from the soil seed bank would not survive.

While there has been extensive research into the effects of fire on some species, such as Grey grass-trees (Curtis 1996, 1998, 2001, 2003) and Spur-wing Wattle (Keenan 2001), increasing knowledge of the effects of fire and research into fire behaviour, ecological fire management and Traditional Owner knowledge will help guide future fire management (DELWP 2013).

River Red Gum riverine forests and wetlands (section 6.1) depend largely on flooding rather than fire for regeneration, and are considered to be sensitive to fire. River Red Gum trees are at risk from detrimental ecological impacts as a result of too-frequent fire and recover slowly after fire. While they are particularly sensitive to high-intensity fire, even a low-intensity fire can kill seedlings and young trees. Large old trees and trees with hollows, which have a high ecological value, may be vulnerable to fire because hollows and cavities allow fire to penetrate these trees, leading to their collapse. Logs and other coarse woody material, which also provide valuable habitat for invertebrates, reptiles, birds and small mammals, and influence water flows across the landscape, are also susceptible to fire.

Only 5% of this forest type has been subject to fire in the last 30 years, and most recent bushfires have burnt less than 5 ha (Eyles 2004, cited in VEAC 2006). About 70% of bushfires are caused by human activities, particularly escaped campfires, and about 10% are ignited

naturally by lightning. Fire records indicate that small fires in the River Red Gum forests are not uncommon, but it is unusual for these to grow into large, intense bushfires because of quick detection and relatively easy access and suppression, and because these forests are a patchwork of wetter and drier areas with generally low fuel loads that do not burn as readily as other eucalypt forests. Fires in River Red Gum forests are generally carried by fine fuels in the grassy ground layer. Although they are generally slow-moving, they can burn for a long time at very high temperatures in some places because of the presence of large logs (DELWP 2015c).

While the dry forests and woodlands communities, including Box–Ironbark forests, are relatively fire-tolerant, much of these areas in Warby–Ovens National Park and Leaghur State Park are long undisturbed by fire. The proximity to agricultural land and the rugged nature of the hills means that the risk from fast-moving grass fires and more intense bushfires during summer can be very high. Bushfires occurred in Warby–Ovens National Park in 1961–62 (250 ha in the vicinity of Taminick Gap), 1989 (950 ha around Mt Warby), 1991 (250 ha in the Killawarra section), and 2014 (a large area on the western side of the park). The Cypress Pine–Buloke community in particular is fire-sensitive and limited in extent; it occurs only in small patches, which makes protection from bushfire difficult.

Fire in the Mallee ecosystems of much of Murray–Sunset and Hattah–Kulkyne national parks (outside the floodplains) is addressed in the Mallee and Murray Goulburn Strategic Bushfire plan and will be included in the Mallee Parks Management Plan.

Fires in the River Red Gum Parks are likely to be more frequent and more severe, as the climate of south-eastern Australia is expected to become hotter and drier as a result of climate change (Lucas et al. 2007; Dunlop & Brown 2008). These changes pose a great challenge for fire management.

Traditional burning

Traditional Owner-led burning practices are important for meeting cultural aspirations and responsibilities. As such, traditional burning practices meet cultural objectives relating to ceremony, hunting and managing food resources and for traditional-ecological objectives that keep Country healthy, such as maintaining plant and animal diversity and keeping fuel loads low.

There is a long history of Traditional Owners applying cultural burning practices in the Murray River Woodlands area. Records show that regular low-intensity burning occurred throughout the floodplain woodlands and that high-intensity bushfires were probably uncommon prior to settlement (VEAC, 2006). Fires were frequent but small in scale, leading to a mosaic of burnt and unburnt areas. Before European settlement, this fire patchiness would have been complemented by seasonal flooding of drainage lines and depressions. The combination of mosaic burning and seasonal flooding produced a rich and diverse ecology through-out Australia, particularly in woodland communities.

The timing of burning would have been influenced by floods, which would rule out spring and summer burning in most years. However, there is no doubt that the grassy understorey in River Red Gum and Black Box Woodlands along the Murray River were burnt, as were dry reed beds in some areas. The burning of grassy understoreys encouraged a flush of grass growth that attracted game species, and the burning of reed beds (probably in patches or strips), encouraged the growth of edible tubers and young reed stems suitable for weaving (Leslie, 1995).

Changes in carbon content in sediment cores suggest that the transition from Aboriginal occupation to European agriculture and forestry in the region has profoundly changed fire regimes, with fires now less frequent but larger and higher intensity (Kenyon and Rutherford 1999). Changes to the fire and flooding regimes over the last 200 years are likely to have altered the structure of many vegetation communities. Flooding is now much less frequent and less regular because of river flow regulation, so that the forest floor is more likely to dry out. This means that fires may be more widespread and potentially more intense.

The re-introduction of traditional burning practices is being enabled by a state-wide Cultural Burning Strategy (2018). The state-wide Cultural Burning Strategy will seek to restore thousands of years of land management practice with a focus on embedding traditional burning practices into fire regimes in Victoria. Included within the Strategy will be descriptions of traditional practices, the kinds of conditions that help determine when and where cultural fire is needed and pre-assessment and ongoing monitoring of traditional burn sites. The Strategy will outline ways of linking cultural burning with other approaches to fuel and fire management. This is important for ensuring that Traditional Owners and other fire practitioners can confidently work with each other as cultural burning is re-introduced in suitable parts of the landscape.

Goals	
<p>Fire is managed as part of the landscape in accordance with the Code of Practice for Bushfire Management on Public Land to:</p> <ul style="list-style-type: none"> • manage the impact of major bushfires on human life, communities, essential and community infrastructure, industries, the economy and the environment. Human life is afforded priority over all other considerations • maintain or improve the resilience of natural ecosystems and their ability to deliver services such as biodiversity, water, and carbon storage. <p>Strong partnerships with Traditional Owners improve the integration of natural and cultural values management with fire management.</p>	
Strategies	Park
<p>Develop partnerships with DELWP, CFA, Victoria Police, communities, local governments, Traditional Owners, and local groups to:</p> <ul style="list-style-type: none"> • maximise bushfire safety messaging • communicate bushfire risk mitigation activities • support training, accreditation, mentoring and shared learning of improved practices • promote a broader understanding of fire management and risk mitigation that aims to mitigate impacts on local interests and economies. 	All
Educate visitors and river boaters about campfire regulations and the need to extinguish all fires and never leave campfires unattended (section 7.3).	All
Work with DELWP to integrate natural and cultural values management and protection into long-term strategic bushfire management plans.	All
Work with DELWP to review and revise emergency management plans and establish protocols for closing parks and protecting areas in parks where visitors may be at risk from bushfire.	All

continued on next page

Strategies	Park
Maintain regular patrols of camping areas, particularly along the rivers during high-fire danger periods. Close parks on days of Code Red bushfire danger or as needed.	All
Work with DELWP to formalise a strategic emergency access network of roads and tracks and maintain the strategic access network, including vegetation clearing for access by tankers and access to key water points.	All
<p>Work with DELWP to integrate natural and cultural values into fire management planned burning (fuel reduction) and mechanical works programs:</p> <ul style="list-style-type: none"> • implement minimum impact (environmentally and culturally sensitive) fire management strategies into bushfire response, planned burning and mechanical works programs • implement appropriate fire management strategies that maintain a mosaic of vegetation growth stages and use the tolerable fire intervals of fire-sensitive vegetation to determine the frequency of planned burns (section 6.1) • use techniques that minimise ground disturbance, particularly on dunes and lunettes, and in high-value areas, such as with threatened species and cultural sites, and areas at risk of exposure to fire retardants. 	All
Review the locations where campfires are permitted and fireplaces are provided to manage the risk of bushfires affecting the high-value areas of natural and cultural assets in riverine forests and wetlands (section 7.1).	All
Work with Traditional Owners and DELWP to find ways to incorporate Traditional Owners' cultural practice of lighting and managing fires in all planned burning programs, and investigate opportunities for further integration of cultural fire practices in fire programs.	All
Incorporate small-scale planned ecological burning trials to control invasive species, such as rush, and use fire in conjunction with, and to complement, environment programs where appropriate.	All
Respond to bushfire in a safe and efficient manner, with protection of human life assigned the highest priority, while seeking to minimise impacts to natural and cultural values.	All
<p>Work with DELWP and agencies to:</p> <ul style="list-style-type: none"> • involve Traditional Owners in all post-bushfire cultural value surveys • improve the timing of bushfire rehabilitation work and the protection of natural and cultural values during this work, and deliver long-term rehabilitation programs to support ecosystems recovery where needed • re-establish safe access for visitors to parks affected by fire as soon as practicable • support community recovery. 	All



Canoeing tour,
Kings Billabong Park

7 People in Parks

The rivers and parks continue to draw people looking for a bush camping experience where they can fish and relax beside the rivers and lakes or enjoy the Warby Ranges and other off-river areas. Many return year after year, with successive generations building deeper connections to the rivers and parks. Local communities value the economic benefits from visitors exploring their special areas.

7.1 Visitor experience

The Murray Destination Management Plan indicates that the parks and reserves on the Murray attract large numbers of visitors each year. The broad patterns and management of recreational use have been established by past policies, plans and practice.

The rivers are a key attraction for visitors to the area, and one of the most popular activities is camping along the Murray, Goulburn and Ovens rivers. Many of the camping areas in the parks, particularly along rivers, have been established by unplanned, incremental use over many decades. Camping in these areas is more or less unregulated, and campers can choose their own campsite within a general area along the river. This has led to damage to the environment and cultural sites as campers spread into new areas. To limit this expansion, this plan designates some 'camping areas' within which visitors can select a campsite. The overall camping experience will be unchanged, with campers choosing a site as they have in the past; the major difference is that the extent of the overall camping area will be restricted.

The planning area also offers a range of other experiences in popular areas such as Hattah Lakes, Warby Ranges and Kerang Lakes. These are described in more detail in the information about visitor experience areas in table 7.1.

A number of other issues have been raised in relation to existing camping and unregulated visitation along the river frontage, particularly waste management, campfires, access and visitor information. Many of the camping areas are on floodplains, and there is a high potential for waste to pollute the river or water table, especially in areas subject to flooding. Campers are encouraged to bring portable toilets, but this has led to problems with the disposal of toilet waste.

Visitation

Access to many camping areas has developed ad hoc over time. The open nature of River Red Gum forests has allowed visitors to develop ad hoc tracks, leading to track braiding, damage to vegetation, increased soil compaction and erosion, and impacts to cultural heritage values and sites. It also makes access difficult, particularly for two wheel drive vehicles.

The community has expressed a preference to retain the parks' undeveloped character. However, management challenges arise from the need to protect ecological and cultural heritage values; manage increasing numbers of visitors; meet some community expectations for high-quality facilities; and maintain infrastructure and tracks. The plan aims to maintain the existing experiences and complement the services and experiences available on other land in the region, including major towns, which offer a wide range of accommodation and services.

Visitor planning starts with identifying the key areas that provide important opportunities for visitors to have a particular experience. These areas, called Visitor Experience Areas (VEAs), are a priority for visitor management programs and actions to protect unique settings that support a range of defined visitor experiences. They are also a focus for delivering visitor services and facilities in a way that protects the integrity of natural and cultural values and minimises impacts.

A VEA may define a 'journey' or a 'destination'. A journey describes where a visitor travels through the landscape, such as the Murray River Adventure Trail VEA. A destination is a precinct containing one or more visitor sites or trails that form the basis for visitor use and activities in that area. For example, Echuca Township VEA is a highly developed destination with facilities that can support a large number of visitors.

The services to be provided in each VEA are based on an analysis of the predominant visitors and activities, and the required settings and facilities. The VEAs are also tenure-blind, meaning that they take into account aspects of the visitor experience outside the parks, such as linking roads, services, and landscape settings.

The River Red Gum Parks include 45 VEAs, which are mapped as overlays for park management zoning scheme (maps 1–13). The VEAs are described in table 7.1 and summarised in appendix 4. Each VEA has defined goals and strategies that focus on managing the experiences defined for that area while protecting natural and cultural values from the impacts of use. The VEAs are the blueprint for managing the majority of recreation and tourism in the parks. Conditions for activities and uses are summarised in table 7.4.

Each VEA includes one or more visitor sites that support the opportunities visitors seek from their visit. There are many visitor sites across the planning area, including campgrounds and picnic areas with visitor facilities such as parking, toilets, signs and picnic tables. Sites and facilities are managed to meet the needs of different visitors at a level of service appropriate to each of the experiences, activities and settings.

The level of service for visitor sites ranges from very high to very basic. Sites with very high service generally provide visitors with ease, convenience and quality facilities, while very basic sites have limited facilities and cater for visitors seeking a self-reliant experience in more natural settings. All facilities and services are located and designed to be sustainable and to manage the impact on park values, and are managed to a safe standard within the resources available. There are also opportunities for visitors to enjoy areas outside the defined VEAs. These areas tend to have lower visitation, and sites have a basic to very basic level of service and generally require less management.

Recreational experiences during flooding

Flooding is an essential part of the areas' ecological processes. During flooding, whether planned (environmental watering) or unplanned (natural flooding), many visitor sites, particularly camping areas, can become fully or partially inundated or inaccessible. This flooding of the landscape also presents an opportunity for visitors to view and experience the parks and wetlands in another natural state. Parks Victoria, DEWLP and municipalities have in place emergency management plans which include managing visitor safety in a planned and unplanned flooded event. The flooding of the landscape also presents this change to the environment that is highly attractive to some visitors including being able to use non-motorised boats, such as canoes and kayaks, in flooded wetlands and opportunities to view



Kayaking on Lake Hattah

diverse and natural increase in birdlife during flooding. Therefore the promotion of recreation experiences during flooding is considered as an important planning consideration. The impact on recreational opportunities will vary with the location, timing, extent, depth and duration of inundation. The main period for environmental watering is late winter and spring, which is when natural flooding would most commonly have occurred before the construction of upstream dams drastically changed river flow regimes.

Restricted access because of flooding can affect visitors' plans. Tour operators and local businesses that derive income from park visitors may also be affected. On the other hand, flooding can enhance recreation opportunities such as canoeing, kayaking, photography and nature study. However, fast-flowing water and submerged objects such as logs can create hazards for water users. As many waterbirds congregate to breed during floods, disturbance by canoeists and kayakers could affect breeding success in flooded areas.

There is a need to improve visitor access and opportunities when parks are flooded. Examples include maintaining appropriate access to key areas, the development of camping areas that remain above some or most flood levels, and the development of temporary canoe trails in areas that become inundated.

As environmental watering only occurs in some parts of the landscape and is limited to particular areas at any one time, there will usually be accessible visitor sites nearby if the intended destination cannot be reached. Camping opportunities in Hattah–Kulkyne National Park are affected by environmental watering. Lake Hattah campground has been regularly inundated by managed watering events in recent years and has typically remained under water for months at a time. The only other camp ground in the Park, Lake Mournpall, is situated above the highest water levels likely to occur through managed watering. However, Mournpall Track which provides two-wheel drive access to the campground from both Mildura and the park visitor centre, is cut by water, making the campground only accessible by four-wheel drive vehicle. Therefore both campgrounds have the potential to be unavailable during environmental watering: Lake Hattah campground to all visitors, and Lake Mournpall campground to two wheel drive access.



Dumped rubbish in Shepparton Regional Park

Waste management in the River Red Gum Parks

The volume of waste dumped in the parks and reserves or left behind by campers and other visitors is staggering, especially along the Murray River waterfront. The level of waste has a huge impact on park values and visitor experiences. Apart from the visual impact, broken glass, jagged metal and food waste are serious health hazards. Because large parts of the Parks are prone to seasonal flooding, waterway pollution from waste is also a serious problem.

Waste management is a major problem throughout the River Red Gum Parks and environs. Visitors are expected to take their waste out of the parks and reserves and dispose of it appropriately. However, during some peak holiday periods and special events on the Murray River, Parks Victoria and councils currently provide waste and recycling bins at or close to popular sites. The current policy is for visitors to carry out their own waste (Carry In, Carry Out). However, litter and waste from campers and other visitors is prevalent in parks and reserves and in nearby towns. This requires constant attention during high-visitation periods from both Parks Victoria and local councils, who work in partnership to manage the issue.

The Carry In, Carry Out policy originated within the hiking context, where it is imperative that waste and rubbish be taken out as the participant would be constantly moving, as opposed to static camping, within the same location, as is predominant in the River Red Gum planning area.

Increasingly, domestic waste is being illegally dumped in parks, along with abandoned vehicles and other non-camping waste. This increases the impact of all waste within the planning area and creates situations where clean-up is becoming more difficult and costly.

Collecting and disposing of waste left or dumped in the parks is a considerable logistical and financial burden on Parks Victoria, and local councils must also cope with the large volume of additional waste disposed of by visitors in council bins and on roadsides. Some councils have a further financial burden because they waive or reduce tip fees for Parks Victoria in disposing of waste collected from parks and reserves. A broad public education program about waste management and disposal has been conducted through The Murray River Guardian newsletter, which provides details of disposal sites, as well as through face-to-face contact by Parks Victoria rangers and information signs at park entry points. Parks Victoria is working

with local councils to coordinate enforcement activities and improve the Murray River Litter Prevention Strategy, which focuses on public education, improving waste infrastructure, enforcement by Parks Victoria and council rangers, collaboration between councils, land managers, waste organisations and other groups, and improved monitoring and evaluation of prevention programs.

A policy for managing glass is proposed along the river front during events. This may involve event organisers working with Parks Victoria to implement a ‘no glass’ policy for the event. Event managers will also be required to provide resources for managing the volume of other waste generated during their events.

Facilities such as toilets, barbecues, showers, shade structures and boat ramps are provided at specific locations as the need is identified. The popularity of dispersed camping within the planning area precludes the provision of such facilities at all campsites and would not be in keeping with an expectation of an ‘undeveloped’ and natural camping experience.

Because of the increasing visitor numbers in the River Red Gum Parks, the need to control human impacts, especially rubbish and human waste, needs to be considered. Therefore Parks Victoria will investigate the value of providing waste infrastructure, including toilets, at locations where high use has been identified and where the ad hoc disposal of rubbish and human waste is having a detrimental impact on the environment. Balancing the need for facility provision will be the consideration to ensure that provision of facilities will not have a negative impact on natural and cultural areas of significance with a priority on maintaining the undeveloped character of the selected locations.

Goals	
A diverse range of opportunities for visitors to experience the parks is explored. Where opportunities for new visitor experiences are suitable they will be provided for. Visitor facilities will be improved and provided in the areas where they are needed.	
Strategies	Park
Protect and enhance visitor experiences throughout the parks as defined for each VEA (table 7.1), giving priority for visitor management to the following VEAs: Cobram, Echuca–Torrumbarry, Goulburn River–Shepparton, Gunbower, Hattah Lakes, Kings Billabong, Koondrook, Lower Ovens, Merbein Common, Nyah–Vinifera, Warby Range, Yarrawonga.	All
Work with community and user organisations and volunteers in managing visitor facilities, roads and tracks.	All
Manage the impact of visitors on environmental and cultural values, giving priority to VEAs and Conservation Zones.	All
Ensure facilities within VEAs are in keeping with the experiences offered and their setting.	All
Support <i>Healthy Parks Healthy People</i> programs, particularly for those people who may benefit most from a healthy parks experience.	All
Continue to implement and promote Parks Victoria’s ‘carry in, carry out’ approach to litter management and work with local councils, community groups and waste management groups to develop strategies for managing litter. Implement the ‘carry in, carry out’ and where necessary ascertain its applicability within the visitor experience environment	All
Investigate the value of providing toilet facilities at locations where high use has been identified and where the impact of human waste is having a detrimental impact on the environment.	All

Table 7.1: Visitor experience areas.

WALLPOLLA ISLAND – MERBEIN (map 2)

Lindsay Island VEA

Lindsay Island VEA, within Murray–Sunset National Park, is 120 km west of Mildura, 35 km east of Renmark, 650 km north-west of Melbourne and 300 km east of Adelaide. It is characterised by a number of creeks meandering from the rivers into swamps, billabongs and floodplains. The VEA is largely zoned Conservation for its natural values; it also contains significant cultural values. The area is reached via the Sturt Highway from Mildura and South Australia. Several tracks lead to shady sites along the creeks where bush camping, fishing and picnicking are enjoyed. Many months of dry access allows a four wheel drive visit to a variety of picturesque locations, including Kulcurna Cliffs and the mouth of Mullaroo Creek. While two wheel drive vehicles can access the island in dry weather, four wheel drive vehicles are recommended.

Mulcra Island – Lock 9 VEA

Mulcra Island – Lock 9 VEA, within Murray–Sunset National Park, is 85 km west of Mildura and 75 km east of Renmark. It is home to abundant wildlife, including kangaroos and emus, and spring wildflowers. Visitors enjoy camping, fishing, picnicking, walking, canoeing and birdwatching. Access generally requires a four wheel drive vehicle. Neds Corner, a 30 000 ha former sheep station now owned by Trust for Nature and managed as a private conservation property, abuts the Murray River and Murray–Sunset National Park.

Wallpolla Island VEA

Wallpolla Island VEA, within Murray–Sunset National Park and part of the proposed Murray River Park, is 30 km west of Mildura, 570 km north-west of Melbourne and 350 km east of Adelaide. It covers 9800 ha of floodplain vegetation, including River Red Gum forest, saltbush plains, seasonal lakes and grasslands. The area has numerous middens and hearths from Aboriginal occupation. Excellent canoeing can be enjoyed throughout the islands. Other visitor activities include camping, fishing, boating and short bushwalks. Two wheel drive vehicles can access the island in dry weather, however, four wheel drive vehicles are recommended. All tracks are dry-weather only, and gates are closed during flooding.

Goal	
Visitors enjoy a remote river-based experience with minimal impact on natural and cultural values.	
Strategies	VEA
Assess impacts to natural and cultural values at all visitor sites and manage to continue to provide a sustainable remote river experience whilst protecting those values.	Lindsay Island, Mulcra Island, Wallpolla Island
Permit dispersed camping and campfires along the Murray River visitor sites.	Lindsay Island, Mulcra Island, Wallpolla Island
Provide alternative camping opportunities where natural or cultural values require protection.	Lindsay Island, Mulcra Island, Wallpolla Island

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Strategies	VEA
Provide fireplaces where natural or cultural values require protection and restrict campfires to those fireplaces.	Lindsay Island, Mulcra Island, Wallpolla Island
Maintain and manage a sustainable formal vehicle track network to enhance emergency, visitor and management access and to protect the local environment. If required, reduce track duplication and footprint in consultation with the community and stakeholders.	Lindsay Island, Mulcra Island, Wallpolla Island
Maintain key access tracks to allow two-wheel drive dry-weather access where required.	Lindsay Island, Mulcra Island, Wallpolla Island
Improve pre-visit and on-site park visitor information, including directional signs and information on activities and access available during high water and flooding.	Lindsay Island, Mulcra Island, Wallpolla Island
Work with Victorian Fishing Authority, VRFish and fishing groups to identify and promote angling access to sites and waterways.	Lindsay Island, Mulcra Island, Wallpolla Island
Permit non-motorised boating at Lake Wallawalla.	Lindsay Island
Investigate options that manage visitor risk and enable areas to be closed during flooding.	Lindsay Island, Mulcra Island, Wallpolla Island
Permit dogs. Dogs must be on lead at all times when not inside a vehicle.	Wallpolla Island

MERBEIN TO NANGILOC (map 3)

Merbein Common VEA

Merbein Common VEA, within the proposed Murray River Park, is 12 km north-west of Mildura. The area encompasses riverine vegetation of Black Box and River Red Gums, billabongs and small patches of Native Pine in a rural setting adjacent to farms and residential development. Merbein promotes itself as an 'RV-friendly town', and the Merbein Common area is popular with owners of campervans and RVs (recreational vehicles). (According to the Caravan Industry Association of Australia a recreational vehicle is classified as a Motorhome Class A,B or C.)

Walking and cycling trails highlight Aboriginal and European heritage and the natural values of the area. Other activities include picnicking, fishing and water sports. Rabbit and duck hunting are seasonal activities and pose some issues because of the proximity of residences and the general popularity of the area (section 7.3).

Kings Billabong VEA

Kings Billabong VEA is very close to Mildura and includes Kings Billabong Park, Woorlong Wetlands and Psyche Bend Lagoon. The area's main attraction, Kings Billabong, is a large wetland adjacent to the Murray River and is rich in wildlife. The area is rich in Aboriginal cultural sites and European heritage. A number of tracks provide access to sites along the Murray River suitable for camping. Activities include canoeing, kayaking, fishing, bushwalking, wildlife watching and birdwatching. An all-abilities canoe launching ramp at Psyche Pumps provides access to Psyche Creek and Kings Billabong.

Goal	
Visitors enjoy easily accessible riverside camping and day visitor areas and a range of associated activities.	
Strategies	VEA
Permit dispersed camping along the Murray River visitor sites.	Merbein Common, Kings Billabong
Provide alternative camping opportunities where natural or cultural values require protection.	Merbein Common, Kings Billabong
Permit campfires.	Merbein Common, Kings Billabong
Provide fireplaces where natural or cultural values require protection and restrict campfires to those fireplaces.	Merbein Common, Kings Billabong
Maintain and manage a sustainable formal vehicle track network to enhance emergency, visitor and management access and to protect the local environment. If required reduce track duplication and footprint in consultation with the community and stakeholders.	Merbein Common, Kings Billabong
Maintain key access tracks to allow two-wheel drive dry-weather access where required.	Merbein Common, Kings Billabong
Maintain existing formal walking tracks.	Merbein Common, Kings Billabong
Improve pre-visit and on-site park visitor information, including directional signs.	Merbein Common, Kings Billabong
Work with council and tourism authorities to develop a visitor guide and map showing facilities in the Mildura area.	Merbein Common, Kings Billabong
Work with local fishing clubs, tourism groups and Victorian and New South Wales government agencies to improve and maintain boating access and infrastructure.	Merbein Common, Kings Billabong
Provide visitor information on accessibility and water activities in times of high water or flood.	Merbein Common, Kings Billabong
Maintain day visitor facilities at Merbein Sandbar.	Merbein Common
Provide for RV camping from River Access 2 to River Access 6.	Merbein Common
Maintain the network of walking and cycling tracks, including links to Merbein.	Merbein Common
Investigate resolution of hunting issues to ensure the safety of visitors and neighbours.	Merbein Common
Investigate the feasibility of introducing safari tent or similar style accommodation.	Kings Billabong

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Kings Billabong Park

Strategies	VEA
Investigate the feasibility of introducing night-time guided tours.	Kings Billabong
Maintain all-abilities canoe launching ramp at Psyche Pumps and Cowanna Bend.	Kings Billabong Merbein Common
Maintain boat ramps at Bruce's Bend, Psyche Bend north of Psyche Pumps, Cowanna Bend, Main Sand Bar and at Red Cliffs.	Kings Billabong Merbein Common
Remove damaged boardwalk infrastructure at Red Gum Gully.	Kings Billabong
Work with the Mallee Catchment Management Authority to refresh interpretation materials, especially in the area surrounding Psyche Pumps.	Kings Billabong
Protect historical buildings and Aboriginal cultural heritage sites, and provide visitor information and interpretation.	Kings Billabong
Maintain bird hides for bird watching opportunities.	Kings Billabong
Permit dogs within both Merbein Common and Kings Billabong. Dogs must be on lead at all times when not inside a vehicle.	Merbein Common, Kings Billabong

Karadoc–Colignan VEA

Karadoc–Colignan VEA, around 40 km south-east of Mildura, includes river bends and sandbars surrounded by large River Red Gums. The VEA cover parts of the proposed Murray River Park, including part of River Murray Reserve. The VEA is popular for camping, fishing and water sports.

Goal	
Visitors can enjoy a remote riverside camping experience with associated activities and minimal impact on natural and cultural values.	
Strategies	VEA
Permit dispersed camping and campfires along the Murray River visitor sites.	Karadoc–Colignan
Provide alternative camping opportunities where natural or cultural values require protection.	Karadoc–Colignan
Maintain a camping area at Karadoc Sandbar.	Karadoc–Colignan
Provide fireplaces where natural or cultural values require protection, and restrict campfires to those fireplaces.	Karadoc–Colignan
Maintain and manage a sustainable formal vehicle track network to enhance emergency, visitor and management access and to protect the local environment. If required, reduce track duplication and footprint in consultation with the community and stakeholders.	Karadoc–Colignan
Maintain key access tracks to allow two-wheel drive dry-weather access where required.	Karadoc–Colignan
Promote and encourage education and scientific study at Lambert Island and Karadoc nature conservation reserves.	Lambert Island Karadoc NCR
Provide improved park and visitor experience information in pre-visit material.	Karadoc–Colignan
Provide visitor information on accessibility and water activities in times of high water or flood.	Karadoc–Colignan
Permit dogs within Nangiloc–Colignan VEA. Dogs must be on lead at all times when not inside a vehicle.	Nangiloc– Colignan

HATTAH–KULKYNE (map 4)

Kulkyne–Liparoo VEA

Kulkyne–Liparoo VEA is 475 km north of Melbourne and about 60 km north of Ouyen, between Wemen and Hattah. It offers basic dispersed camping along the Murray River in Murray–Kulkyne Park and Hattah–Kulkyne National Park. The area has scenic views of the river and expansive sandbars surrounded by River Red Gum and Black Box woodland. Popular activities include camping, fishing, swimming, canoeing, kayaking and birdwatching.

Goal	
Visitors can enjoy a remote river-based experience with minimal impact on natural and cultural values.	
Strategies	VEA
Maintain camping areas at Billabong Bend, Tarpaulin Bend and Sextons Bend.	Kulkyne–Liparoo
Permit dispersed camping along the Murray River visitor sites.	Kulkyne–Liparoo
Provide alternative camping opportunities where natural or cultural values require protection	Kulkyne–Liparoo
Permit campfires.	Kulkyne–Liparoo
Provide fireplaces where natural or cultural values require protection, and restrict campfires to those fireplaces.	Kulkyne–Liparoo
Maintain and manage a sustainable formal vehicle track network to enhance emergency, visitor and management access and to protect the local environment. If required, reduce track duplication and footprint in consultation with the community and stakeholders.	Kulkyne–Liparoo
Maintain key access tracks to allow two-wheel drive dry-weather access where required.	Kulkyne–Liparoo
Work with the Victorian Fishing Authority, VRFish and fishing groups to identify and promote angling access to sites and waterways.	Kulkyne–Liparoo
Provide visitor information on accessibility and water activities in times of high water or flood.	Kulkyne–Liparoo
Prohibit dogs from national parks, and allow dogs only on lead in regional parks.	Kulkyne–Liparoo

Hattah Lakes VEA

Hattah Lakes VEA is about 450 km north of Melbourne, 35 km north of Ouyen and 74 km south of Mildura off the Calder Highway. Hattah Lakes, within Hattah–Kulkyne National Park, is a popular camping area and forms the basis of the Hattah Lakes VEA. The area has significant natural values, including the Ramsar-listed wetlands. It is rich in European and Aboriginal cultural heritage and is a popular base for families, school groups and individuals.

Hattah Lakes VEA offers two designated camping areas with basic facilities at Lakes Hattah and Mournpall, ideal for larger groups, and has a number of walking tracks around the lakes system. The area provides opportunities for canoeing, kayaking, swimming, picnicking, birdwatching, nature study and educational activities.

Camping opportunities in Hattah–Kulkyne National Park are affected by environmental watering. Lake Hattah campground has been regularly inundated in recent years and has typically remained under water for months at a time. The only other camp ground in the Park, Lake Mournpall, is situated above the highest water levels likely to occur through managed watering. However, Mournpall Track which provides two-wheel drive access to the campground from both Mildura and the park visitor centre, is cut by water, making the campground only accessible by four-wheel drive vehicle. As a result, both campgrounds may be largely inaccessible during environmental watering.

Goal	
Visitors enjoy a range of recreational experiences supported by low-key visitor facilities. Schools and other large groups are catered for.	
Strategies	VEA
Maintain camping areas at Lake Hattah and Lake Mournpall with basic facilities, subject to bookings and fees. Ensure some sites are suitable for schools and other large groups.	Hattah Lakes
Permit campfires.	Hattah Lakes
Provide fireplaces where natural or cultural values require protection, and restrict campfires to those fireplaces.	Hattah Lakes
Investigate the feasibility of providing safari tent or similar style accommodation.	Hattah Lakes
Upgrade facilities and interpretation and education materials at Hattah–Kulkyne Visitor Centre.	Hattah Lakes
Upgrade walking tracks, including making tracks suitable for all-abilities use where possible.	Hattah Lakes
Provide for canoeing and kayaking on the lake system.	Hattah Lakes
Provide improved park and visitor experience information in pre-visit material.	Hattah Lakes
Provide visitor information on accessibility and water activities in times of high water or flood.	Hattah Lakes
Provide bird hide for birdwatching opportunities.	Hattah Lakes
Investigate the feasibility of providing an alternative campground during extended periods of flood inundation.	Hattah Lakes Lake Mournpall
Prohibit dogs from Hattah–Kulkyne National Park.	Hattah Lakes Lake Mournpall

ROBINVALE AND SURROUNDS (map 5)

Wemen–Coreena Bend VEA and Gadsen Bend Park VEA

Wemen–Coreena Bend VEA and Gadsen Bend Park VEA, 5 km south-west of Robinvale and 470 km from Melbourne, offer basic dispersed camping along the banks of the Murray River. The VEAs cover parts of the proposed Murray River Park including areas of River Murray Reserve. These areas are rich with Aboriginal and European history and are popular for fishing, swimming, canoeing, horse riding, walking and birdwatching.

Goal	
Visitors enjoy secluded camping and associated nature-based activities along the Murray River.	
Strategies	VEA
Permit dispersed camping along the Murray River visitor sites.	Wemen–Coreena Bend, Gadsen Bend Park
Provide alternative camping opportunities where natural or cultural values require protection.	Wemen–Coreena Bend, Gadsen Bend Park
Permit campfires.	Wemen–Coreena Bend, Gadsen Bend Park
Provide fireplaces where natural or cultural values require protection, and restrict campfires to those fireplaces.	Wemen–Coreena Bend, Gadsen Bend Park
Maintain Wemen and Coreena Bend boating access and infrastructure.	Wemen–Coreena Bend, Gadsen Bend Park
Provide improved park and visitor information in pre-visit material, including information on tree risks and firewood collection restrictions.	Wemen–Coreena Bend, Gadsen Bend Park
Protect and interpret heritage sites, working with Traditional Owners with respect to interpreting Aboriginal culture.	Wemen–Coreena Bend, Gadsen Bend Park
Provide visitor information on accessibility and water activities in times of high water or flood.	Wemen–Coreena Bend, Gadsen Bend Park
Permit dogs in Wemen–Coreena Bend and Gadsen Bend Park. Dogs must be on lead at all times when not inside a vehicle.	Wemen–Coreena Bend, Gadsen Bend Park

Bumbang VEA

Bumbang VEA, 15 km south of Robinvale and 405 km from Melbourne, offers a natural day visitor experience. The VEA covers the Bumbang Bushland Reserves, Toltol Flora and Fauna Reserve, Toltol Bushland Reserve and Bannerton Flora and Fauna Reserve. The reserves are lightly wooded, and a track network runs through the area. Activities include bushwalking and birdwatching. These areas are popular with visitors who are seeking an undeveloped natural experience.

Goal	
Visitors have the opportunity to enjoy a recreation experience including basic camping and walking.	
Strategies	VEA
Provide and maintain day visitor facilities	Bumbang VEA
Permit dogs in the Bumbang Bushland Reserve, the Toltol Bushland Reserve. Dogs must be on lead at all times when not inside a vehicle.	Bumbang VEA

Robinvale VEA

Robinvale VEA, around Robinvale township, offers basic camping along the river. The area also has day visitor sites and plays host to the annual Robinvale 80 Ski race on the Labour Day weekend. Other popular activities include fishing, water-skiing, swimming, walking, birdwatching and house-boating. Its proximity to Robinvale and access to the Murray River makes it a popular area with local residents.

Goal	
Visitors enjoy a range of recreational experiences, including events.	
Strategies	VEA
Review visitor sites to determine future management with a focus on maintaining those that support the goal.	Robinvale
Provide improved park and visitor information in pre-visit material, including information on accessibility and water activities in times of high water or flood.	Robinvale
Permit camping at Punt Bend and Knights Bend camping areas.	Robinvale
Work with CMA on Event Service Agreement for Community events. Work with CMA on management of community events during environmental watering.	Robinvale
Permit campfires within Punt Bend and Knights Bend camping areas.	Robinvale
Provide fireplaces where natural or cultural values require protection, and restrict campfires to those fireplaces.	Robinvale
Maintain and manage a sustainable formal vehicle track network to enhance emergency, visitor and management access and to protect the local environment. If required, reduce track duplication and footprint in consultation with the community and stakeholders.	Robinvale
Maintain key access tracks to allow two-wheel drive dry-weather access where required.	Robinvale
Formalise car parking and access roads, including restricting vehicle access over levy bank.	Robinvale
Maintain existing walking tracks; extend walking tracks to link The Cut to The Flats.	Robinvale
Permit dogs at Punt Bend and Knights Bend camping areas. Dogs must be on lead at all times when not inside a vehicle.	Robinvale

Belsar Island VEA

Belsar Island VEA is 25 km south-east of Robinvale. Accessible off the Murray Valley Highway, the VEA offers basic remote camping along the Murray River in part of the proposed Murray River Park and day visitor sites in Lakes Powell and Carpul Wildlife Reserve. It has abundant Aboriginal and European history and is predominantly an island setting accessed via a bridge over Narcooyia Creek. It is a popular area providing opportunity to fish, swim, canoe, walk, hunt and observe wildlife.

Goal	
Visitors enjoy a range of recreational experiences supported by a range of visitor facilities.	
Strategies	VEA
Permit dispersed camping along the Murray River visitor sites.	Belsar Island
Provide alternative camping opportunities where natural or cultural values require protection.	Belsar Island
Permit campfires	Belsar Island
Provide fireplaces or restrict campfires to those fireplaces where natural or cultural values require protection.	Belsar Island
Upgrade Belsar interpretation information board and relocate to day visitor area and facilities at Belsar Bridge crossing.	Belsar Island
Provide improved park and visitor experience information in pre-visit material.	Belsar Island
Work with water and emergency response authorities to ensure that information is easily available about rapid rises in water levels from flooding or scheduled dam releases to enable visitors to safely leave the flood affected areas.	Belsar Island
Work with Traditional Owners to prohibit access to areas where visitor use is causing unacceptable harm to cultural values.	Belsar Island
Establish gates and implement temporary road and access closures during flood.	Belsar Island
Provide visitor information on accessibility and water activities in times of high water or flood.	Belsar Island
Permit dogs within the proposed Murray River Park. Dogs must be on lead at all times when not inside a vehicle.	Belsar Island
Investigate the development of a canoe and boating trail for use during natural flooding and environmental watering events.	Belsar Island

Murrumbidgee Junction VEA

Murrumbidgee Junction VEA is a few minutes from Boundary Bend and 50 km south-east of Robinvale. This VEA offers basic camping along the banks of the Murray River in part of the proposed Murray River Park and around Heywood Lake in Heywood Lake Wildlife Reserve. The area is rich with history, and includes the Murrumbidgee–Murray rivers confluence and Major Mitchell's Passage Camp. The area is popular for fishing, swimming, canoeing, hunting and birdwatching.

Goal	
Visitors enjoy secluded camping along the Murray River and associated nature-based activities.	
Strategies	VEA
Permit dispersed camping along the Murray River visitor sites.	Murrumbidgee Junction
Provide alternative camping opportunities where natural or cultural values require protection	Murrumbidgee Junction
Permit campfires	Murrumbidgee Junction
Provide fireplaces where natural or cultural values require protection and restrict campfires to those fireplaces	Murrumbidgee Junction
Upgrade Narrung boating access and infrastructure.	Murrumbidgee Junction
Upgrade Major Mitchell's Passage Camp interpretation.	Murrumbidgee Junction
Improve pre-visit and on-site visitor information, including information on tree risks, hunting and firewood collection restrictions.	Murrumbidgee Junction
Provide visitor information on accessibility and water activities in times of high water or flood.	Murrumbidgee Junction
Permit dogs within the proposed Murray River Park. Dogs must be on lead at all times when not inside a vehicle.	Murrumbidgee Junction

Burra–Piambie VEA

Burra–Piambie VEA is a 30 km stretch of river east of Piambie easily accessible from the Murray Valley Highway. It includes part of the proposed Murray River Park, including part of River Murray Reserve and the Major Mitchell Lagoon Historic Area. The area is rich with Aboriginal and European history, hosting the Wakool Junction and Major Mitchell Lagoons. This area offers camping along the banks of the Murray River. Popular activities include fishing, swimming, canoeing, kayaking, bushwalking, birdwatching and hunting.

Goal	
Visitors enjoy secluded camping along the Murray River and associated nature-based activities.	
Strategies	VEA
Permit dispersed camping along the Murray River visitor sites.	Burra–Piambie
Provide alternative camping opportunities where natural or cultural values require protection	Burra–Piambie
Permit campfires	Burra–Piambie
Provide fireplaces where natural or cultural values require protection and restrict campfires to those fireplaces	Burra–Piambie
Review visitor sites to determine management with a focus on maintaining sites that support the goal and closing sites that pose a risk to natural or cultural values.	Burra–Piambie
Maintain existing road and track network.	Burra–Piambie
Work with Victorian Fishing Authority, VRFish and fishing groups to identify and promote angling access to sites and waterways	Burra–Piambie
Upgrade Major Mitchell Lagoon interpretation and walking track.	Burra–Piambie
Provide improved park and visitor experience information in pre-visit material.	Burra–Piambie
Provide visitor information on accessibility and water activities in times of high water or flood.	Burra–Piambie
Permit dogs within the proposed Murray River Park. Dogs must be on lead at all times when not inside a vehicle.	Burra–Piambie

NYAH-VINIFERA – SWAN HILL (map 6)

Nyah-Vinifera VEA

Nyah-Vinifera VEA covers Nyah-Vinifera Park, north of Swan Hill. The area protects forests along the Murray River and smaller areas of woodland. It is a popular for camping, fishing and walking. The park provides direct access to the Murray River and is a popular location to enjoy water-based activities.

Goal	
Visitors enjoy secluded camping along the Murray River and associated nature-based activities.	
Strategies	VEA
Permit dispersed camping along the Murray River visitor sites.	Nyah-Vinifera
Provide alternative camping opportunities where natural or cultural values require protection.	Nyah-Vinifera
Permit campfires.	Nyah-Vinifera
Provide fireplaces where natural or cultural values require protection and restrict campfires to those fireplaces	Nyah-Vinifera
Review visitor sites to determine management with a focus on maintaining sites that support the goal and closing sites that pose a risk to natural or cultural values.	Nyah-Vinifera
Maintain existing road and track network.	Nyah-Vinifera
Work with Traditional Owners to provide interpretation for visitors and to protect Aboriginal cultural sites, including burials, middens and scar trees.	Nyah-Vinifera
Permit dogs within the proposed Murray River Park. Dogs must be on lead at all times when not inside a vehicle.	Nyah-Vinifera
Continue to maintain the Parnee Malloo Walk as a key feature of the VEA and provide information and interpretation for visitors on locations of interest.	Nyah-Vinifera
Explore options to facilitate and promote recreational activities during floods.	Nyah-Vinifera

Swan Hill-Pental Island VEA

Located close to Swan Hill, Swan Hill-Pental Island VEA includes numerous popular camping locations along the Murray River covering part of the proposed Murray River Park, including areas of River Murray Reserve. Some issues have been raised regarding access to camping areas with some campers commandeering some locations for extended periods in order to exclude other campers. Access is generally four wheel drive with some dry-weather two wheel drive access. Activities include fishing, bushwalking and wildlife viewing. As water levels are lower, there are no speedboats in the area and canoes, kayaks and smaller boats are used.

Goal	
Visitors enjoy secluded camping along the Murray River and associated nature-based activities.	
Strategies	VEA
Permit dispersed camping along the Murray River visitor sites.	Swan Hill– Pental Island
Provide alternative camping opportunities where natural or cultural values require protection.	Swan Hill– Pental Island
Permit campfires.	Swan Hill– Pental Island
Provide fireplaces where natural or cultural values require protection and restrict campfires to those fireplaces.	Swan Hill– Pental Island
Maintain and manage a sustainable formal vehicle track network to enhance emergency, visitor and management access and to protect the local environment. If required reduce track duplication and footprint in consultation with the community and stakeholders.	Swan Hill– Pental Island
Maintain key access tracks to allow two-wheel drive dry-weather access where required.	Swan Hill– Pental Island
Provide equitable camping access and reducing overcrowding during peak periods. Options to be investigated in consultation with the community and stakeholders, such as VRFish, may include delineating West Bend, Middle Bend and Eastern Bend Loddon Floodplain camping areas and Brookes Lane camping area, and managing camper numbers and length of stay during peak periods.	Swan Hill– Pental Island
Assess impacts to natural and cultural values at all visitor sites and manage to continue to provide a sustainable remote river experience whilst protecting those values.	Swan Hill– Pental Island
Work with VRFish, local fishing clubs, tourism groups and Victorian and New South Wales government agencies to rationalise, improve and maintain boating access and infrastructure.	Swan Hill– Pental Island
Liaise with New South Wales Roads and Maritime Services and local governments in Victoria and New South Wales regarding mooring of houseboats around Swan Hill.	Swan Hill– Pental Island
Work with Traditional Owners to provide interpretation for visitors and to protect Aboriginal cultural sites, including burials, middens and scar trees.	Swan Hill– Pental Island
Permit dogs at Swan Hill and Pental Island. Dogs must be on lead at all times when not inside a vehicle.	Swan Hill– Pental Island

KERANG AND GUNBOWER (map 7)

Kerang Lakes VEA

Kerang Lakes VEA includes Ramsar-listed lakes, swamps and lagoons in a range of reserves near Kerang. These wetlands regularly support large numbers of waterbirds and a diversity of wildlife, and are popular with birdwatchers. Kerang Lakes are also popular for duck hunting and fishing. Camping at the Wildlife Management Station can cater for larger groups.

Goal	
Visitors enjoy a range of recreational experiences.	
Strategies	VEA
Permit dispersed camping and campfires.	Kerang Lakes
Provide alternative camping opportunities where natural or cultural values require protection.	Kerang Lakes
Provide fireplaces where natural or cultural values require protection, and restrict campfires to those fireplaces.	Kerang Lakes
Manage the Wildlife Management Station as a basic camping area.	Kerang Lakes
Investigate options for new walking trails, including linking Kerang township to Reedy Lakes.	Kerang Lakes
Prohibit dogs from Kerang Lakes	Kerang Lakes
Provide opportunities for birdwatching, such as bird hides and information about birdwatching sites.	Kerang Lakes

Benjeroop VEA

Benjeroop VEA includes a number of wildlife reserves, swamps and lagoons in a range of reserves near Kerang. The reserves provide an undeveloped natural experience, which includes Benjeroop Wildlife Reserve, McMillans Lake Bushland Reserve, Dartagook Wildlife Reserve, Capels Crossing Streamside Reserve, Plumptions Wildlife Reserve, and Westblades Wildlife Reserve. The reserves are lightly wooded with a tracks running through the area. The VEA has the Little Murray River, Loddon River and numerous creeks running through the area. Activities include bushwalking, horse riding, hunting and bird watching. All the reserves provide basic dispersed camping within an undeveloped natural setting.

Goal	
Visitors enjoy a range of recreational experiences.	
Strategies	VEA
Permit dispersed camping.	Benjeroop
Provide alternative camping opportunities where natural or cultural values require protection.	Benjeroop
Permit campfires.	Benjeroop
Provide fireplaces where natural or cultural values require protection, and restrict campfires to those fireplaces.	Benjeroop
Permit dogs in the Benjeroop Wildlife Reserve, McMillans Lake Bushland Reserve, Dartagook Wildlife Reserve, Capels Crossing Streamside Reserve, Plumpton Wildlife Reserve, and Westblades Wildlife Reserve. Dogs must be on lead at all times when not inside a vehicle.	Benjeroop

Leaghur VEA

Leaghur VEA covers the main block of Leaghur State Park and Lake Leaghur Wildlife Reserve. The state park is popular for camping, picnics and barbeques beside Lake Meran. It attracts birdwatchers, and a network of roads and tracks lead visitors through Black Box woodlands. Wallabies and kangaroos often graze on the open plains at dawn and dusk.

Goal	
Visitors have the opportunity to enjoy basic camping and walking.	
Strategies	VEA
Permit camping at the Leaghur camping area.	Leaghur
Provide alternative camping opportunities where natural or cultural values require protection.	Leaghur
Change the day visitor facilities from Leaghur State Park Boort–Kerang Road entrance to a managed park entrance with visitor information.	Leaghur
Maintain and manage a sustainable formal vehicle track network to enhance emergency, visitor and management access and to protect the local environment. If required reduce track duplication and footprint in consultation with the community and stakeholders.	Leaghur
Maintain key access tracks to allow two-wheel drive dry-weather access where required.	Leaghur
Continue to prohibit dogs from Leaghur State Park.	Leaghur

Koondrook VEA

The Koondrook VEA covers a stretch of the proposed Murray River Park from Thompsons Track to Benwell, north-west of Gunbower National Park. There are numerous locations along the river for camping, with most sites accommodating up to three medium-sized caravans. It is typically a four wheel drive accessible area with some areas accessible by two wheel drive in dry weather. Activities include fishing, bushwalking and birdwatching.

Goal	
Visitors enjoy secluded camping along the Murray River and associated nature-based activities.	
Strategies	VEA
Permit dispersed camping along the Murray River visitor sites.	Koondrook
Provide alternative camping opportunities where natural or cultural values require protection	Koondrook
Permit campfires	Koondrook
Provide fireplaces where natural or cultural values require protection and restrict campfires to those fireplaces	Koondrook
Maintain and manage a sustainable formal vehicle track network to enhance emergency, visitor and management access and to protect the local environment. If required reduce track duplication and footprint in consultation with the community and stakeholders.	Koondrook
Maintain key access tracks to allow two-wheel drive dry-weather access where required	Koondrook
Investigate options to improve camping facilities at McKenzie Bend camping area; provide an area for RV's, caravans and campervans.	Koondrook
Work with VRFish, local fishing clubs, tourism groups and government agencies to maintain boating access and infrastructure.	Koondrook
Permit dogs in Koondrook Historic Reserve campgrounds. Dogs must be on lead at all times when not inside a vehicle.	Koondrook
Work with commercial forestry organisations to manage the traffic management visitor risk relating to neighbouring harvesting activities	Koondrook
Work with DEWLP and commercial forestry organisations to identify new tenure arrangements for Koondrook Park, in particular Apex Park and Koondrook Wharf.	Koondrook
Work with North Central CMA, DELWP and VR Fish to remove fish passage blockages and improve visitor access.	Koondrook

Gunbower VEA

Largely within Gunbower National Park, but including an adjacent area of proposed Murray River Park, Gunbower VEA covers a stretch of the Murray River from Gunbower Island to Deep Creek, including Ramsar listed wetlands. The dry forest and River Red Gum landscape provides numerous locations along the river for camping, with most sites accommodating up to three medium-sized caravans.

It is typically a four wheel drive accessible area with some dry-weather two wheel drive access. There are spots for isolated quiet fishing and birdwatching in a natural setting. Lower water levels mean speedboats tend to avoid the area. The Masters House is a heritage building on Gunbower Island, consisting of a timber and corrugated iron dwelling.

Goal	
Visitors enjoy secluded camping along the Murray River and associated nature-based activities.	
Strategies	VEA
Provide equitable camping access and reducing overcrowding during peak periods. Options to be investigated in consultation with the community and stakeholders, such as VRFish, may include delineating camping areas, managing camper numbers and length of stay during peak periods.	Gunbower
Permit campfires	Gunbower
Provide fireplaces where natural or cultural values require protection and restrict campfires to those fireplaces	Gunbower
Maintain and manage a sustainable formal vehicle track network to enhance emergency, visitor and management access and to protect the local environment. If required reduce track duplication and footprint in consultation with the community and stakeholders.	Gunbower
Maintain key access tracks to allow two-wheel drive dry-weather access where required	Gunbower
Maintain formal walking tracks	Gunbower
Provide information on the cultural significance of Masters House and surrounds as an example of a rare riverbank residence of a Murray River fishing family.	Gunbower
Investigate options for providing areas within proposed Murray River Park where dogs may be permitted.	Gunbower (within proposed Murray River Park only)
Continue to prohibit dogs from Gunbower NP	Gunbower



Torrumbarry Weir

ECHUCA (map 8)

Echuca–Torrumbarry VEA

Echuca–Torrumbarry VEA includes the Murray River and adjacent natural parklands north-west of Echuca, and includes part of the proposed Murray River Park including areas of River Murray Reserve, and Baillieu Lagoon Wetland Reserve. The river and associated waterways, fringed by Box and Red Gum forests, provide camping and fishing. Other popular activities include water-skiing, bushwalking, and birdwatching in the wetlands or a bush setting.

Goal	
Visitors have access to basic riverside camping with associated recreation, including fishing and water-based activities, in an area that can provide for large numbers during peak periods.	
Strategies	VEA
Permit dispersed camping and campfires along the Murray River visitor sites.	Echuca–Torrumbarry
Provide alternative camping opportunities where natural or cultural values require protection.	Echuca–Torrumbarry
Permit campfires.	Echuca–Torrumbarry
Provide fireplaces where natural or cultural values require protection, and restrict campfires to those fireplaces.	Echuca–Torrumbarry

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Strategies	VEA
Continue to provide for basic camping at Wills Bend and Farley Bend camping areas and upgrade part of the camping areas to formal camp grounds.	Echuca–Torrumbarry
Improve track condition and directional signage to aid in emergency response, visitor orientation and access.	Echuca–Torrumbarry
Work with local fishing clubs, tourism groups, Fisheries Victoria and Maritime NSW to improve and maintain boat ramp facilities and mooring zonings to a suitable standard.	Echuca–Torrumbarry
Work with organisers, the New South Wales Government and local authorities to manage high visitation during the Southern 80 ski race.	Echuca–Torrumbarry
Permit dogs in Echuca–Torrumbarry. Dogs must be on lead at all times when not inside a vehicle.	Echuca–Torrumbarry
Improve the facilities at the Torrumbarry day visitor area.	Echuca–Torrumbarry

Echuca Township VEA

The Echuca Township VEA consists of part of the proposed Murray River Park, including areas of the River Murray Reserve around Echuca. The VEA provides for day use visitor areas with access to the Murray River, walking, fishing and caravan parks. Swimming under the bridge is a popular experience and houseboats can pull up to banks and mooring sites.

Various festivals on the river and in the town attract large numbers of visitors to the area. A number of private operators, including caravan parks, provide accommodation adjacent to the proposed park.

Kanyapella VEA

Kanyapella VEA covers an area east of Echuca offering basic camping along the Murray River in part of the proposed Murray River Park including areas of River Murray Reserve. Other popular activities include fishing, water-skiing and houseboating. It is a popular spot because of its proximity to Echuca and its shady but more rural setting, with mainly farmland on the opposite bank.

Goal	
Visitors have access to day visit and camping areas by the Murray and Goulburn Rivers close to Echuca.	
Strategies	VEA
Maintain day visitor facilities near Echuca and Wharparilla Bushland Reserve.	Echuca Township
Improve road access to, and within, day visitor areas.	Echuca Township
Permit dispersed camping along the Murray River visitor sites except in the vicinity of Echuca township, including Wharparilla Bushland Reserve.	Echuca Township
Permit dispersed camping along the Goulburn River visitor sites.	Kanyapella
Provide alternative camping opportunities where natural or cultural values require protection.	Echuca Township, Kanyapella
Rationalise track network within Echuca Regional Park and provide signage	Echuca Township, Kanyapella
Promote visitor opportunities at Kanyapella for birdwatching.	Kanyapella
Permit dogs in Echuca Township and Kanyapella. Dogs must be on lead at all times when not inside a vehicle.	Echuca Township, Kanyapella

Simpson–Wyuna VEA

Simpson–Wyuna VEA covers the northern reaches of Goulburn River where it joins the Murray River east of Echuca. The VEA includes Wyuna Nature Conservation Reserve (NCR) and the northern part of Lower Goulburn National Park. The area is popular for camping and fishing, attracting visitors largely from the local area.

Undera VEA

Undera VEA offers an accessible bush camping experience within Lower Goulburn National Park. The area offers a sense of isolation despite being close to Shepparton. The VEA has sandy, shady beaches along the Goulburn River and is a popular fishing location with a number of informal boat ramps providing access to the river.

Goal	
Visitors have access to remote bush camping experiences and associated recreation activities.	
Strategies	VEA
Permit dispersed camping along the Goulburn River visitor sites.	Simpson–Wyuna, Undera
Provide alternative camping opportunities where natural or cultural values require protection	Simpson–Wyuna, Undera
Permit campfires	Simpson–Wyuna, Undera
Provide fireplaces where natural or cultural values require protection and restrict campfires to those fireplaces	Simpson–Wyuna, Undera
Work with Yorta Yorta to ensure Aboriginal sites are suitably protected. Close camping areas and tracks that pose a threat to Aboriginal cultural sites.	Simpson–Wyuna, Undera
Improve track condition and directional signage to aid emergency response, visitor orientation and access.	Simpson–Wyuna, Undera
Document and protect post-colonial heritage; investigate interpretation and education opportunities.	Simpson–Wyuna, Undera
Work with Victorian Fishing Authority, VRFish and fishing groups to identify and promote angling access to sites and waterways	Simpson–Wyuna, Undera
Liaise with Wakiti Creek Resort regarding activities, such as horse trail rides.	Simpson–Wyuna
Provide interpretation regarding river and water management of the Goulburn River and its history.	Undera
Prohibit dogs from Lower Goulburn National Park	Simpson–Wyuna, Undera
Upgrade the Yambuna Bridge boat ramp for the use of small fishing boats and canoes on the Goulburn River.	Simpson–Wyuna, Undera

Myers–Loch Garry VEA

To the north-west of Shepparton, following the Goulburn River, Myers–Loch Garry VEA offers sandy beaches with quiet, shady camping areas. The VEA includes part of Lower Goulburn National Park and incorporates Loch Garry Wildlife Reserve, where hunting of duck and quail is permitted. As well as hunting and camping, the area provides for birdwatching and has trail connections to Shepparton. Goulburn–Murray Water is the assigned waterway manager for Loch Garry.

Goulburn River–Shepparton VEA

Goulburn River–Shepparton VEA covers parts of Lower Goulburn National Park and Shepparton Regional Park. This VEA has high visitor numbers due to its easy access from the major centres of Shepparton and Mooroopna. Included in the VEA is the popular Reedy Swamp area of Lower Goulburn National Park and Gemmill Swamp Wildlife Reserve. Both offer opportunities to undertake birdwatching. Walking and bike trails make their way through much of this VEA. Being close to a major urban centre raises a number of concerns, such as illegal rubbish dumping, itinerant camping and other behavioural issues.

Arcadia–Murchison VEA

South of Shepparton is the Arcadia–Murchison VEA, which covers part of Shepparton Regional Park and Arcadia Streamside Reserve. The area is popular for camping, fishing and canoeing, and there is easy access from nearby towns.

Goal	
Visitors enjoy wetland wildlife and river experiences including camping and day use. There is a strong connection with the Shepparton community.	
Strategies	VEA
Permit dispersed camping along Goulburn River visitor sites.	Myers–Loch Garry, Goulburn River–Shepparton, Arcadia–Murchison
Provide alternative camping opportunities where natural or cultural values require protection	Myers–Loch Garry, Goulburn River–Shepparton, Arcadia–Murchison
Permit campfires	Myers–Loch Garry, Goulburn River–Shepparton, Arcadia–Murchison
Provide fireplaces where natural or cultural values require protection and restrict campfires to those fireplaces	Myers–Loch Garry, Goulburn River–Shepparton, Arcadia–Murchison
Work with City of Greater of Shepparton to better identify and define park boundaries and assets	Myers–Loch Garry, Goulburn River–Shepparton, Arcadia–Murchison
Work with Victorian Fishing Authority, VRFish and fishing groups to identify and promote angling access to sites and waterways, including possible infrastructure near Murchison township.	Myers–Loch Garry, Goulburn River–Shepparton, Arcadia–Murchison

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Strategies	VEA
Maintain track condition and directional signage to aid in emergency response, visitor orientation and access.	Myers–Loch Garry, Goulburn River–Shepparton, Arcadia–Murchison
Liaise with VicRoads regarding proposed Goulburn Valley Highway – Shepparton Bypass and potential effect on traffic and access.	Myers–Loch Garry
Provide day visitor areas close to Shepparton (Youngs Bend, Park Bend, Shepparton Causeway).	Goulburn River–Shepparton
Provide facilities and services for day use, especially in the Flats Area.	Goulburn River–Shepparton
Work with social service agencies and Greater Shepparton City Council to reduce camping in the area by people requiring emergency accommodation.	Goulburn River–Shepparton
Work with Goulburn–Murray Water to ensure visitors are aware of sudden changes in water levels associated with releases from Nagambie Weir.	Arcadia–Murchison
Permit dogs in Shepparton Regional Park. Continue to permit dogs in Gemmill Swamp WR. Dogs must be on lead at all times when not inside a vehicle.	Shepparton Regional Park
Work with GBCMA, GMW, YNAAC and hunting groups to improve wetland health, protect cultural values at Reedy Swamp and Loch Garry and investigate educational opportunities.	Myers–Loch Garry, Goulburn River–Shepparton, Arcadia–Murchison
Work with community and hunters to develop specific sections of Loch Garry into a day visitor area with a focus on fishing, hunting, boating and recreation.	Myers–Loch Garry, Goulburn River–Shepparton, Arcadia–Murchison
Promote visitor opportunities at Reedy Swamp and Loch Garry for birdwatching	Myers–Loch Garry, Goulburn River–Shepparton

BARMAH AREA (map 10)

Barmah Township VEA

Barmah Township VEA covers part of the proposed Murray River Park including areas of River Murray Reserve north and south of Barmah township. The area caters for day visits and basic camping among Box and River Red Gums close to the town. Activities are related to the river and include fishing, boating and canoeing.

Goal	
Provide for basic camping and day visits linked to Barmah township.	
Strategies	VEA
Liaise with Moira Shire with respect to management and promotion of Barmah township and surrounds as a visitor destination.	Barmah Township
Review boat launching opportunities and upgrade where required.	Barmah Township
Permit dispersed camping along Murray River visitor sites.	Barmah Township
Provide alternative camping opportunities where natural or cultural values require protection	Barmah Township
Permit campfires	Barmah Township
Provide fireplaces where natural or cultural values require protection and restrict campfires to those fireplaces	Barmah Township
Consider Barmah Boatramp Concept Master Plan for future development of site	Barmah Township

TOCUMWAL TO YARRAWONGA (map 11)

Ulupna Island – Strathmerton VEA

Ulupna Island – Strathmerton VEA is located along a 10 km stretch of the Murray River covering parts of Tocumwal Regional Park, the proposed Murray River Park which does not include areas of the Barmah National Park. The area includes sandy beaches on east end of the low-lying Ulupna Island, which is created by Ulupna Creek branching off from and then re-joining the Murray River. Fishing and other water-based activities are popular, along with camping. The whole area, and specifically Ulupna Island, contains one of the highest densities of koalas in Victoria.

Tocumwal VEA

Tocumwal VEA, near Tocumwal township, offers camping, fishing and access to the river for activities such as water-skiing. The VEA covers part of the proposed Murray River Park including areas of River Murray Reserve, and includes a private caravan park within it. The camping area is popular as it remains accessible during high water.

Cobram VEA

Covering part of the proposed Murray River Park including areas of River Murray Reserve adjacent to Cobram township, Cobram VEA provides for day visitors and campers seeking water-based activities. Many visitors access the town via courtesy buses and taxis provided by Cobram businesses.

Cobrawonga VEA

Cobrawonga VEA covers areas of proposed Murray River Park including areas of River Murray Reserve and provides for camping and fishing in a quiet, isolated area of River Red Gum forest. There are a number of informal boat ramps providing access to the Murray River.

Yarrowonga VEA

Yarrowonga VEA covers part of the proposed Murray River Park including areas of River Murray Reserve as well as Big Reedy Lagoon Wildlife Reserve. The VEA is within 3 km of Yarrowonga, where town facilities and services, such as hotels and the golf course, offer courtesy buses and taxis for visitors camping within the VEA. The VEA offers camping near sandy beaches in River Red Gum forest. River-based activities are popular and there is a boat ramp located at the caravan park with shared public access. Big Reedy Lagoon offers hunting in season.

Goal Visitors have access to camping and a range of river-based activities.	
Strategies	VEA
Maintain and manage a sustainable formal vehicle track network to enhance emergency, visitor and management access and to protect the local environment. If required reduce track duplication and footprint in consultation with the community and stakeholders.	Ulupna Island –Strathmerton, Tocumwal, Cobram, Cobrawonga, Yarrowonga
Maintain key access tracks to allow two-wheel drive dry-weather access where required.	Ulupna Island –Strathmerton, Tocumwal, Cobram, Cobrawonga, Yarrowonga
Work with VRFish, local fishing clubs, tourism groups and government agencies to rationalise, improve and maintain boating access and infrastructure.	Ulupna Island –Strathmerton, Tocumwal, Cobram, Cobrawonga, Yarrowonga
Permit dispersed camping along the Murray River visitor sites.	Ulupna Island –Strathmerton, Tocumwal, Cobram, Cobrawonga, Yarrowonga
Provide alternative camping opportunities where natural or cultural values require protection.	Ulupna Island –Strathmerton, Tocumwal, Cobram, Cobrawonga, Yarrowonga
Review Ulupna Island toilet facilities; replace facilities with environmental flood resistant systems and look to place facilities in less flood prone areas.	Ulupna Island –Strathmerton
Improve and maintain formal trails in the area and where required close any informal trails .	Tocumwal

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Strategies	VEA
Prohibit camping under Tocumwal main bridge. Direct visitors to alternative camping areas.	Tocumwal
Investigate options at Apex Beach to provide equitable camping access and reduce overcrowding during peak periods. In consultation with the community identify if any areas require management of camping numbers and length of stay.	Tocumwal
Review current day visitor infrastructure at Quinns Island with a view to its enhancement and future maintenance.	Cobram
Investigate extending the existing committee of management area at Thompsons Beach to provide clearer and more consistent management.	Cobram
Providing equitable camping access at Big Toms Beach and reduce overcrowding during peak periods. Options to be investigated will include delineating camping areas and limiting camper numbers and length of stay.	Cobram
Investigate options to improve boat ramp facilities at Horseshoe Bend.	Cobram
Provide day visitor site either side of Cobram Barooga bridge and look to license area to Moira Shire as part of the Thompsons Beach / Kennedy Park footprint.	Cobram
Maintain bridge at Cobrawonga Island.	Cobrawonga
Permit camping throughout the VEA except at the eastern end of Yarrowonga Common, adjacent to the private caravan park and at boat ramp.	Yarrowonga
Investigate delineating camping areas, provide camping sites accessible to RVs, and providing camping capacity information and managing length of stay at Yarrowonga Common and Forges Beach 1.	Yarrowonga
Remove Pump Bend Track from the park and work with Vic Roads and Moira Shire to formalise public road access into Time Out Holiday Park.	Yarrowonga
Review, improve and maintain walking tracks and interpretative signage.	Yarrowonga
Permit dogs. Dogs must be on lead at all times when not inside a vehicle.	Ulupna Island –Strathmerton, Tocumwal, Cobram, Cobrawonga, Yarrowonga

WARBY–OVENS NATIONAL PARK (map 12)

Lower Ovens VEA

The Lower Ovens VEA covers an area of wetlands and River Red Gum forest along the heritage-listed Ovens River within Warby–Ovens National Park. The area is largely undeveloped giving visitors a sense of solitude and isolation. Visitor numbers are low despite offering opportunities for camping, canoeing and fishing as well as for viewing wildlife, particularly birds.

Goal	
Visitor opportunities have been developed with a focus on river and wetland experiences and bush camping.	
Strategies	VEA
Work with VicRoads to improve traffic safety at key park entrances.	Lower Ovens
Investigate the feasibility and options of establishing an overnight canoe trail with canoe-accessible basic camping areas and potential for links with adjacent Parolas VEA. This includes providing vehicle-based camping areas, sustainable access, signage, and visitor information and interpretation.	Lower Ovens
Limit development to basic facilities; support complementary facility development on adjoining public land.	Lower Ovens
Permit campfires.	Lower Ovens
Provide fireplaces where natural or cultural values require protection, and restrict campfires to those fireplaces.	Lower Ovens
Work with NECMA, DELWP and VR Fish to remove fish passage blockages and improve visitor access.	Lower Ovens

Warby Range VEA

Warby Range VEA covers the Warby Range section of Warby–Ovens National Park and provides easy, two wheel drive access to views and opportunities for short- to medium-length walks. Two camping areas allow basic camping from where visitors can explore the Box–Ironbark and Stringybark forests, Grass-trees, wildflowers and waterfalls. Some of the walking tracks are open to cyclists and attract a small number of riders.

Goal	
Visitors enjoy walking, horse riding, cycling and basic camping opportunities showcasing the granite and dry forest landscape.	
Strategies	VEA
Maintain existing basic camping facilities at Wenhams and The Forest camping areas.	Warby Range
Maintain day visitor facilities at Pine Gully and Ryan’s Lookout and Spring Creek.	Warby Range
Subject to <i>Phytophthora cinnamomi</i> considerations, support future walking and cycling links between Winton Wetlands, Glenrowan and Wangaratta within the park.	Warby Range
Improve information about the area’s heritage.	Warby Range
Review walking tracks in the Sunrise area with a view to removing redundant tracks.	Warby Range
Continue to prohibit dogs from Warby–Ovens National Park.	Warby Range
Provide fireplaces and restrict campfires to those fireplaces.	Warby Range
Upgrade Brien’s Gorge Track and develop a walking track from Brien’s Gorge to Wenham’s Camp.	Warby Range
Maintain Sailsbury Falls Track and include interpretation of the historic water race and weir.	Warby Range
Upgrade the Springtime Wildflower Walk to provide better access for visitors with limited mobility .	Warby Range
Investigate access for horses from the eastern side of the park on Boilerwood and Stypandra Track.	Warby Range
Continue to prohibit rock climbing and abseiling in the park.	Warby Range
Do not permit firewood collection for campfires.	Warby Range
Rename Warby Oven National Park	Warby Range

YARRAWONGA TO WODONGA (map 13)

Parolas VEA

Parolas VEA is a popular area along the banks of the Ovens River at its confluence with the Murray River in the Lower Ovens Wildlife Reserve. The area is popular for a number of activities, including duck hunting, camping, fishing, birdwatching and canoeing. A private caravan park on the south-west border uses a boat ramp within the reserve for launching power boats and jet skis, which travel through the reserve to the Murray River. The River Red Gum forest is part of the backwaters of Lake Mulwala, and in-water activities such as boating fall under New South Wales management, although a Victorian fishing licence is required. An area of freehold land lies within the VEA.

Goal	
Visitors enjoy basic bush camping.	
Strategies	VEA
Delineate camping areas on eastern side of Ovens River. Permit dispersed camping on the western side of Ovens River.	Parolas
Permit campfires	Parolas
Provide fireplaces where natural or cultural values require protection and restrict campfires to those fireplaces.	Parolas
Permit dogs within designated camping areas. Dogs must be on lead at all times when not inside a vehicle.	Parolas
Work with hunting groups to manage potential conflicts of use between hunters and other visitors.	Parolas
Establish a 'no hunting' buffer adjacent to inlying freehold land adjoining Bundalong township and Murray–Ovens Junction.	Parolas
Work with New South Wales agencies to develop a strategy for managing the boat ramp and access.	Parolas
Investigate options for providing toilet facilities for campers and day visitors, including options for temporary toilets during peak periods.	Parolas
Investigate the feasibility of establishing an overnight canoe trail with canoe-accessible basic camping areas and potential for links with adjacent Lower Ovens VEA.	Parolas
Investigate options for the management of the Ovens River from the junction of the Murray River to the Murray Valley Highway to be returned to Victorian waterway management.	Parolas
Prohibit jet skis from all wetlands and waterways between the Ovens and Murray rivers confluence, including Williams Creek and the Williams Bridge area.	Parolas

Stantons VEA

Stantons VEA extends along a 20 km section of the proposed Murray River Park including areas of River Murray Reserve east of its confluence with the Ovens River. It provides a natural setting with tracts of River Red Gum forest on both sides of the river. As it is slightly further from nearby towns, it provides a more isolated experience, although it is popular in peak periods and some locations, such as Stantons Bend, can become crowded. Boat access for fishing and power boating is good and supported by basic bush camping.

Goal	
Visitors can enjoy a less developed river experiences with access for fishing and water-based activities supported by basic camping in designated areas.	
Strategies	VEA
Permit dispersed camping along the Murray River visitor sites.	Stantons
Provide alternative camping opportunities where natural or cultural values require protection.	Stantons
Permit basic camping at Taylors Bend and Lumpys Bend.	Stantons
Investigate formalising a camp ground at Stantons Bend, including upgrading facilities and investigating options for toilets during peak periods in consultation with the community.	Stantons
Permit campfires.	Stantons
Provide fireplaces where natural or cultural values require protection, and restrict campfires to those fireplaces.	Stantons
Work with local fishing clubs, tourism groups and government agencies to rationalise, improve and maintain boating access and infrastructure.	Stantons
Permit dogs. Dogs must be on lead at all times when not inside a vehicle.	Stantons

Corowa–Wahgunyah VEA

The Corowa–Wahgunyah VEA is based around the twin towns on either side of the river, linking Granthams Bend in the north to Lake Moodemere in the south along a 20 km stretch of the Murray River. The VEA includes part of the proposed Murray River Park including areas of River Murray Reserve and Lake Moodemere Lake Reserve and Moodemere Nature Conservation Reserve. The area is within the Rutherglen wine region and provides a rural and urban experience with rowing, water-skiing and fishing popular on Lake Moodemere. Walking is also possible along vehicle tracks along the river with links to the Murray to Mountain Rail Trail. Small areas of basic bush camping are provided farther out from town on the river edge.

Goal	
Visitors enjoy water-based activities centred around Lake Moodemere and use the VEA as a base for exploring the Rutherglen region. The area is also a key access point for the proposed Murray River Adventure Trail and Murray to Mountains Rail Trail.	
Strategies	VEA
Work with the local community to improve facilities at Granthams Bend with the view to developing a day visitor area immediately on the opposite bank to the caravan park and retaining the upstream section as a camping area.	Corowa–Wahgunyah
Create Day Visitor area between Lake Moodemere lake edge and Lake Road.	Corowa–Wahgunyah
Review Lake Moodemere to investigate allowing RV camping.	Corowa–Wahgunyah
Permit campfires.	Corowa–Wahgunyah
Provide fireplaces where natural or cultural values require protection, and restrict campfires to those fireplaces.	Corowa–Wahgunyah
Improve connection to adjacent opportunities, such as Murray to Mountains Rail Trail, Murray River Adventure Trail (including links to Wahgunyah–Corowa) and All Saints Winery.	Corowa–Wahgunyah
License rowing club use of club facilities.	Corowa–Wahgunyah
Collaborate with Goulburn Murray Water for managing water levels in Lake Moodemere and maintain water levels for recreation.	Corowa–Wahgunyah
Investigate options for promoting the area’s cultural links to Aboriginal artist Tommy McRae.	Corowa–Wahgunyah
Work with VR Fish, local fishing clubs, tourism groups and government agencies to reconcile, improve and maintain boating access and infrastructure.	Corowa–Wahgunyah
Work with cross border tourism bodies and local government to promote cross border boating, waste management and tourism facilities and opportunities.	Corowa–Wahgunyah
Permit dogs at campgrounds in Lake Moodemere Lake Reserve. Dogs must be on lead at all times when not inside a vehicle.	Corowa–Wahgunyah

Howlong VEA

Based around the town of Howlong in New South Wales, the Howlong area is a narrow 50 km strip of the proposed Murray River Park including areas of River Murray Reserve along the Murray River, set among rural farmlands. The area provides access to fishing and power boating on the river supported by basic bush camping. Duck hunting is also permitted.

Goal	
Provide a less developed, lower use, rural experience with access to the river for fishing and water-based activities supported by very basic camping in designated areas.	
Strategies	VEA
Permit campfires.	Howlong
Provide fireplaces where natural or cultural values require protection, and restrict campfires to those fireplaces.	Howlong
Review camping in narrow park area with the aim of minimising impacts such as toilet waste.	Howlong
Work with VRFish, local fishing clubs, tourism groups and government agencies to rationalise, improve and maintain boating access and infrastructure.	Howlong
Permit dogs at campgrounds at Howlong. Dogs must be on lead at all times when not inside a vehicle.	Howlong

RIVER RED GUM DRIVE VEA

The River Red Gum Drive is one of Victoria's Icon 4WD Adventures. It covers over 350 km of tracks along the Murray River, taking in Gunbower and Barmah National Parks in Victoria and Murray Valley National Park and Perricoota and Koondrook state forests in New South Wales. The drive is classified as easy in dry conditions. Key features include Masters Landing and the Dharnya Centre.

Goal	
The River Red Gum Drive is maintained as one of Victoria's Iconic 4WD Adventures.	
Strategies	VEA
Maintain tracks and facilities that form part of the Icon Drive as a priority.	River Red Gum Drive
Liaise with New South Wales agencies regarding management of the Icon Drive.	River Red Gum Drive
Provide information about the drive at the key service towns of Echuca, Cohuna and Nathalia.	River Red Gum Drive

GUNBOWER ISLAND FOREST DRIVE VEA

Gunbower Island, Australia's largest inland island, is located between the Murray River and Gunbower Creek. It is internationally recognised as a wetland of significance for its importance to birdlife, native mammals and amphibians.

Gunbower Island Forest Drive is a leisurely half-day drive through the Gunbower Island's Gunbower National Park and Gunbower State Forest. The drive starts in Cohuna. The River Red Gum and Black Box forests, the experimental nursery and Graham's Hut are all part of the drive. It links in a number of historical, cultural and ecological sites of interest.

Goal	
The Gunbower Island Forest Drive is maintained and promoted as a key visitor experience of the River Red Gum Parks	
Strategies	VEA
Work with stakeholders in the promotion and provision of information about the drive at the key service towns within the area	Gunbower Island Forest Drive
Work with stakeholders to maintain tracks and facilities that form part of the forest Drive.	Gunbower Island Forest Drive

MURRAY RIVER ADVENTURE TRAIL VEA

The *Murray Region Tourism Destination Management Plan* (MRTB 2012) identified the potential for developing a multi-day adventure trail catering for walking, cycling, canoeing and boating, extending from Lake Hume to Wentworth, called the Murray River Adventure Trail.

The proposal is for a river-based trail along 1390 km of the Murray River, with supporting infrastructure such as canoe launching and landing areas and camping facilities, and a walking and cycling trail of about 1040 km alongside the river, including around 310 km of new trails.

The proposed Murray River Adventure Trail has the potential to be a world-renowned trail. Because much of the cycling and walking trail and infrastructure would be within River Red Gum Parks, the development would require close cooperation between Parks Victoria, the Murray Region Tourism Board, Traditional Owners and local government.

Goal	
Provide for walking, cycling and paddling along the Murray River as part of the Murray River Adventure Trail.	
Strategies	VEA
Continue to work with stakeholders, including Murray Regional Tourism, NSW Parks, local councils and other land managers to investigate the feasibility of the Murray River Adventure Trail.	Murray River Adventure Trail
Work with Traditional Owners on trail infrastructure at Barmah National Park, consistent with the JMP, and on interpretation and other aspects of the trail in other parks.	Murray River Adventure Trail

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Strategies	VEA
Develop a detailed design master plan for the proposed trail corridor including analysis of existing trail network for trail upgrades and new trail sections and infrastructure, including cultural heritage and environmental assessments, risk management and impacts on existing park visitors.	Murray River Adventure Trail
Pending the projects viability undertake upgrades to existing trails that will form part of the proposed trail, construct new trail sections, dedicated campgrounds and associated amenities at appropriate locations along the trail.	Murray River Adventure Trail
Work with Visit Victoria, Murray Regional Tourism, tour operators and other partners to promote the adventure trail.	Murray River Adventure Trail
Work with Murray Regional tourism board and local government agencies to ensure the Murray River Adventure Trail considers disabled access and toilet access.	Murray River Adventure Trail

Experiences during floods

Both the Murray and Goulburn rivers are regulated via weirs and dams, such as at Lake Hume and Lake Nagambie. Despite regulation, areas along the rivers remain subject to flooding and this is likely to increase with climate change. Flooding is an essential part of the areas' ecological processes.

Managed delivery of environmental water for ecological purposes will increase the number of years when flooding occurs. In the red gum forest areas this may mean instead of flooding three years in seven, the forests will be inundated six or seven years in ten. Impacts of flooding will be a major consideration in the future provision of facilities and upgrading of facilities. During flood, visitor access may need to be restricted for safety. In addition, floods can damage bridges, fences, visitor facilities and roads and areas may remain closed until they can be checked to ensure safe access or while damaged assets are repaired.

The water flow management program, through the Sustainable Diversion Limits (SDL) program, presents unique recreation opportunities that can be offered and at the same time emergency management plans will be key to manage any risks associated with flooding and access restrictions. Enhanced recreation opportunities for non-powered boats such as canoes and kayaks will be available and promoted. However, specific camping grounds and access roads will be restricted due to flooding.

Goal	
Manage the impacts of flooding on visitor access and improve recreation opportunities in flooded areas.	
Strategies	VEA
Identify alternative visitor sites not susceptible to inundation, or loss of access, during different levels of planned or unplanned flooding within the planning area, to direct visitors from potential impacts.	All
Work with partners to manage, and where possible limit, the impacts of environmental watering on visitor access in both existing and yet-to-be established environmental watering sites.	MSNP, HKNP and Gunbower NP
Consider upgrading road and track access to key visitor sites to limit the duration that sites are cut-off during flooding.	All

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Flooded carpark at Hattah Lakes

Strategies	VEA
Identify opportunities to improve visitor access and experiences during flooding, such as establishing campsites at popular locations that remain above flood levels and developing canoe trails in areas that become inundated.	All
Ensure recreation activities that occur in flooded areas, such as canoeing and kayaking, are safe and do not detrimentally affect significant natural or cultural values, particularly colonial waterbird nesting sites.	All
Provide visitor information about recreational opportunities available during flooding, ensure access is maintained to locations where these activities can be safely undertaken, and promote the availability of these opportunities.	All
When flooding occurs, provide information on nearby alternative destinations that are not flood-affected.	All
Investigate the feasibility of developing an alert and information system to update visitors on the current and predicted status of flooding in identified areas.	All
Provide briefings to affected local governments and the opportunity to promote further recreation activities in their respective areas	All
Identify and develop an alternative campsite at, or close to, Lake Hattah for use during floods.	Hattah Lakes
Upgrade vehicle access into Lake Mournpall camp ground to allow for access by two-wheel drive vehicles during floods.	Lake Mournpall
Ensure appropriate visitor risk and emergency management plans are in place for recreational opportunities offered in a flooded landscape	All



Access road, Cobram Regional Park

7.2 Access and visitor facilities

The road and track network is maintained for public and management access, including emergency response. Tracks are maintained to mitigate their impact on park values, and may be closed at short notice to protect park values or for visitor safety. Track standard varies across the planning area and seasonally.

Tracks are generally dry-weather-only two wheel drive; that is, only trafficable by two wheel drive vehicles in dry conditions and impassable by two wheel drive vehicles when wet; they may be trafficable by four wheel drive vehicles all year. Many tracks become impassable when wet, even for four wheel drive vehicles. Some tracks are two wheel drive and trafficable all year. Many tracks are subject to inundation during flood and may be closed during floods and require repair once floodwaters have receded. Tracks will also vary in their ability to carry larger vehicles, caravans and trailers.

Management vehicle only (MVO) tracks are used for essential management and emergency response. They are closed to public vehicles but open to walkers; some are available for horse riding and cycling. The road and track network in many areas, particularly along the Murray River, has developed ad hoc over many years. As a consequence, there are some tracks that are not required for management, have limited value for management or recreation, or pose a risk to natural or cultural values due to poor siting or construction.

The River Red Gum Drive, one of Victoria's six Icon four wheel drive routes, links the areas of the proposed Murray River Park, Gunbower National Park and Gunbower State Forest with River Red Gum areas outside the planning area, including Barmah National Park in Victoria and Koondrook and Perricoota state forests and Murray Valley National Park in New South Wales. The Discover Murray River Trail passes through the planning area along its route from Cooma in New South Wales to Lake Alexandrina in South Australia.

Visitor sites include camping and day visit areas where visitors can experience the natural and cultural heritage of the Parks. Most visitors are seeking a self-reliant experience, although some visitors prefer more accessible camping with a wider range of facilities. Road signs directing visitors to parks and reserves are often lacking or not informative, particularly in indicating the most appropriate points of access.

Goal	
A range of tracks and facilities are maintained to support recreation, park management and emergency response while minimising environmental and cultural impacts of visitation.	
Strategies	Park
In consultation with the community, review the vehicle track network to determine which are essential for emergency, visitor and management access. Close and rehabilitate tracks that are not required or are posing a threat to park values. Maintain required tracks and rationalise to dry-weather access.	All
Develop Cultural Heritage Management Plans as required for management of tracks and camping areas, and ensure protection of cultural sites.	All
Map tracks to be maintained, including working with Traditional Owners to use local Aboriginal languages in naming currently unnamed tracks.	All
Improve track condition and directional signage to aid in visitor orientation and access.	All
Remove facilities that are no longer suitable for visitor activities.	All
Provide information at key visitor sites and entry points about park access, values, facilities and experiences available.	All
Liaise with VicRoads and local councils to ensure that clear and safe park access is provided from major highways.	All
Manage the spread of weeds by visitors by focusing facilities and access at key park destinations.	All

Goal	
To maintain park access and visitor opportunities during floods.	
Strategies	Park
Close low-lying roads and tracks during planned and unplanned flooding.	All
Provide information to visitors about park closures and access to alternative visitor sites during floods.	All
Investigate options to facilitate park, track and site management including access during floods.	All
Work with water authorities, CMAs and government authorities to improve understanding of flood impacts on park management and incorporate into future planning of visitor assets and infrastructure.	All
Work with water authorities, CMAs and government authorities to ensure visitors are aware of sudden changes to water levels associated with water releases.	All

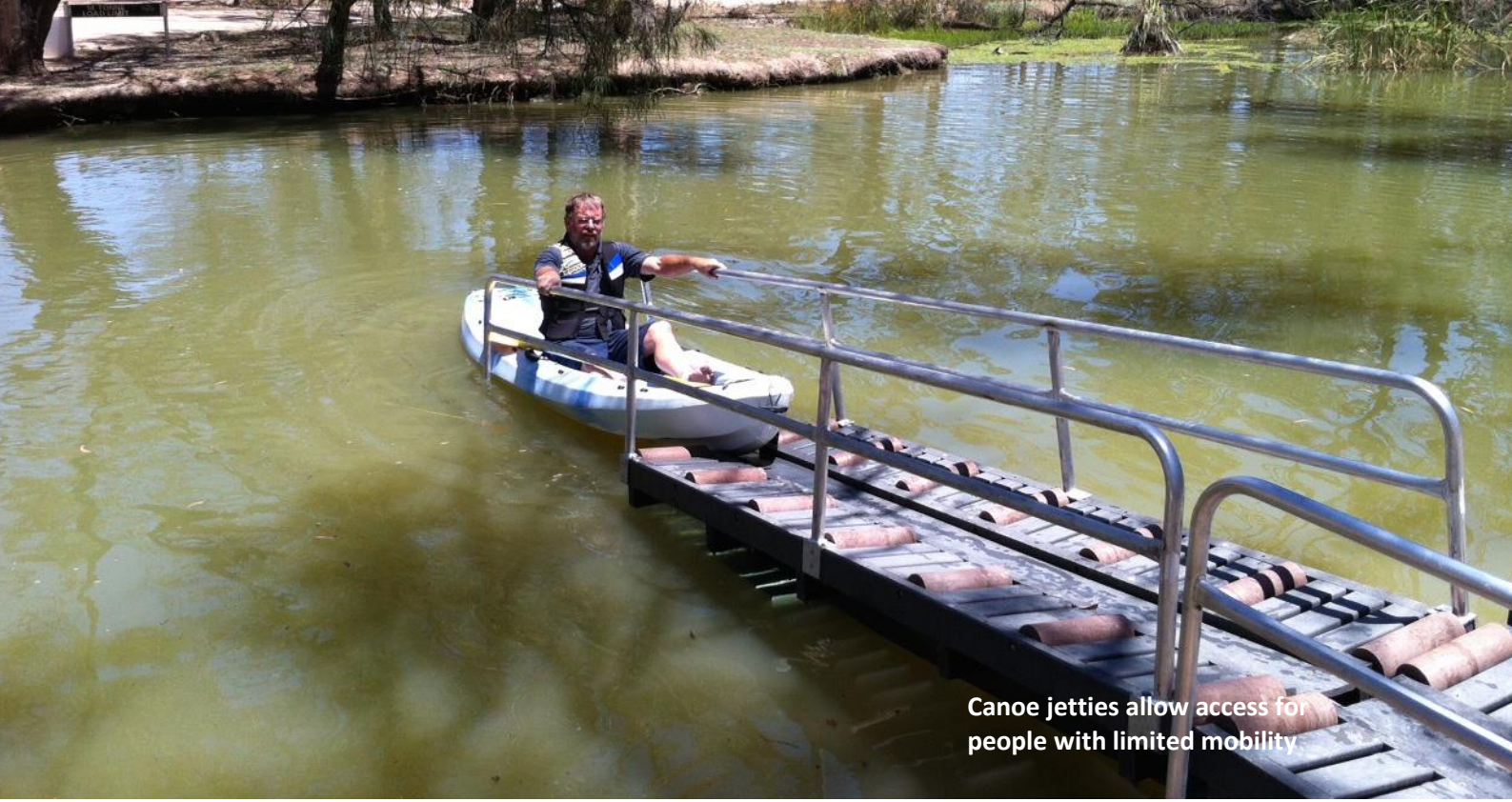


All-terrain wheelchairs and buggies can help people with disabilities access walking tracks.

Access for people with disabilities

People with disabilities face a range of barriers when wishing to visit a park. Park management needs to consider what physical or other assistance people may need to explore parks and participate in park programs. This includes ensuring park information is accessible for people with impaired vision, constructing trails and facilities that cater for people with mobility limitations and ensuring park programs like Junior Rangers cater for all. Within the planning area, a canoe launcher has been constructed at Kings Billabong that provides canoe access for people with disabilities. More facilities may be provided, such as accessible fishing platforms, canoe and walking trails, camping, picnic and toilet facilities, and access to all-terrain wheelchairs.

Goal	
Access to parks for visitors with disabilities is improved.	
Strategies	Park
Ensure new and upgraded facilities meet disability standards where practicable.	All
Identify priority visitor sites for providing access for, and use by, people with disabilities.	All
Where possible, ensure volunteer and education programs are inclusive of people with disabilities.	All
Work with Murray Regional Tourism Board and local government agencies to ensure Murray River Adventure Trail considers disabled access.	All



Canoe jetties allow access for people with limited mobility

7.3 Visitor activities

The River Red Gum landscape covers a number of different areas and attracts visitors for a range of activities. Most of the planning area lies along or close to the Murray, Goulburn and Ovens rivers, which attract people looking for water-based and riverside activities. The most popular of these, which are described in more detail below, are camping, fishing, canoeing and water-skiing. Seasonal duck hunting is permitted in some areas and is a popular activity for many visitors.

Both the Goulburn and Ovens rivers are declared heritage rivers: the Goulburn from Lake Eildon to its confluence with the Murray River and the Ovens from Killawarra to the Murray. As heritage rivers, their scenic and natural values must be protected, as must recreational opportunities such as angling.

Visitors can be considered to belong to two distinct groups: day visitors and campers. Campers may engage with the environment through dispersed camping, camping in designated camping areas, or camping with caravans or recreational vehicles. Day visitor sites are often located close to settlements and can be very popular, depending on accessibility. Day visitors and campers require different types of infrastructure, and there are different considerations in relation to the activities that visitors wish to undertake.

Goal	
Opportunities for a range of visitor activities from easy to challenging are provided with minimal impacts on the natural and cultural values and other users	
Strategies	Park
Work in partnership with representative organisations to understand and improve recreation opportunities, including the needs of people with limited mobility.	All
Continue to improve recreational opportunities in consultation with users, tour operators and local communities.	All
Improve equity of use in responding to new and emerging activity trends. Improve visitors' understanding of where recreation activities are appropriate, and the rules and codes applying in different types of parks and reserves.	All
Ensure that recreation activities are undertaken in the land tenure most suitable for sustaining those activities.	All
Manage visitor activities in accordance with table 7.1 and conditions and additional strategies noted for specific activities below.	All

Camping

River flats within the parks are a popular setting for camping and provide a low-cost holiday option for many people. Camping along the Murray River has increased in popularity in recent years, with visitors congregating on the many river bends, beaches and sandbars that provide good access for boating, fishing and water-based activities. Many visitors return to the same location and stay for extended periods, developing strong connections with those places. Camping in many areas is highly seasonal, with exceptionally busy periods during summer and Easter but lower numbers of campers at other times.

VEAC (2008) described the most popular form of camping as 'camping along the river frontage accessible by vehicle, at a site of one's choosing, and where there are generally no toilets, drinking water or fireplaces'. Maintaining this camping experience within the planning area was identified by VEAC as important. This included the ability to camp with dogs. However, with increasing usage, maintaining the quality of this experience is becoming more challenging, particularly during peak periods and in popular areas. A number of environmental, cultural and social impacts are also occurring.

Camping, particularly on river bends, has denuded habitat over extensive areas and is affecting Aboriginal sites and cultural values in some areas. Campers seeking privacy, such as sites screened by vegetation, are causing incremental expansion of camping areas, which will, if not appropriately managed, cause further substantial impacts over time. Some campers commandeer areas for extended periods, including setting up unoccupied camps days or weeks before peak periods in order to exclude other campers, leading to complaints about equity of access.

In some areas, particularly near major towns and rural cities, itinerant workers, such as fruit pickers, and homeless people camp in the parks for extended periods. In some cases, this poses security and safety concerns for park visitors and staff as well as creating issues for nearby residents and communities.

Many camping areas are subject to flooding, which can damage infrastructure and pose a risk to public safety. Dense regrowth after flooding can also affect campsites and access tracks.

There is increasing use of and opportunities to provide for camper vans (also known as motor homes and RVs). The Campervan and Motorhome Club of Australia created an initiative where towns could be promoted as 'RV-friendly' if they offered a number of services, such as suitable parking and access to potable water and sewage dump points; there are a number of 'RV-friendly towns' along the Murray River. RV users often seek free camping sites such as roadside areas and free camping areas in parks, some of which are susceptible to being damaged as they are not suitable for larger camper vans. However, there are opportunities to improve accessibility for RVs in some locations.

People camping with dogs are permitted in the proposed Murray River Park, historic areas and reserves and regional parks, where the dog must be on a lead and under effective control at all times. Dogs are not permitted in national and state parks or nature conservation reserves, including flora and fauna reserves and wildlife reserves.

Changing trends in camping experiences, such as safari camping, eco-cabin camping and hard infrastructure camping experiences such as cabins are becoming increasingly popular. These camping options will start to appear in the planning area, often as an alternative camping offer to the more natural dispersed camping option. Parks Victoria will consider the suitability of new camping opportunities as they are demanded, specifically in relation to the suitability of location.

Camping experiences

Different types of camping experiences are available within the planning area, varying according to the level of services provided and the remoteness from other park visitors.

Dispersed Camping

Dispersed Camping refers to a bush camping experience where campers select a camp that is well away from other visitors, and are self-sufficient. This style of camping is generally associated with remote areas where there is little if any interaction with other visitors and repeated use of a camp is low. This is the most popular type of camping along the rivers.

Camping areas

Camping Areas offer a similar experience to dispersed camping in that there are no formal campsites: campers select their own campsite within a broad area, and campers generally need to be self-sufficient. They are well-known areas, often mapped and named, that consistently attract people so that there is an expectation that there may be a number of campers in the area. Where use is high, facilities may be provided. Areas such as Kings Billabong, Tarpaulin Bend, Wills Bend and Punt Bend are examples of camping areas along the Murray River, while Wenhams Camping area in Warby–Ovens National Park is an example of a camping area with a higher level of facilities. These will be retained with only minimal change where required for public safety or amenity.

Campground

Visitors seeking a camping experience where they can book a campsite in an area with a range of facilities, such as toilets, picnic tables and drinking water, can stay in a Campground. Campgrounds cater for a number of campers, have defined campsites, often allow bookings to ensure your stay, and may require a fee to be paid. Hattah Lakes Campground, in Hattah–Kulkyne National Park, is a popular example.

Campground bookings can be an effective way of both controlling impact on the environment and ensuring the quality of the visitor experience. Different views exist as to the value of camp bookings within the planning area. The concept of dispersed camping, supported by the VEAC, supports the concept of ‘camping at sites that are self-selected’. Those that prefer dispersed camping do not support camp bookings, whether with fees or without. Others support the booking of campsites within campgrounds as a means of controlling over-crowding, and as a mechanism of waste control and minimising human impact. The issue of charging for camp bookings is problematic as historically camping within the planning area has not incurred a cost. This approach supports the concept of a ‘natural camping experience’ with little or no ancillary facilities provided. Parks Victoria is undertaking an analysis of the impact of camp bookings in the planning area.

Goal	
A mix of camping opportunities are maintained, recognising the importance of informal camping areas where visitors select their own sites, with improved protection of cultural and natural values.	
Strategies	Park
Permit dispersed camping (camping where visitors select their own campsite) along the Murray river visitor sites.	Refer to table 7.2
Delineate or provide alternative camping areas (within which visitors select their own campsite) where sites identified require protection of cultural or natural values.	All
Where high visitation or commandeering of campsites impact cultural or natural values, camping experiences or public health, delineate the area available for dispersed camping. Limit camper numbers, apply maximum length of stay and investigate providing a booking system and fees when needed, in consultation with the community.	All
Review the visitor experience and service offer at Hattah Lakes and Mournpall (Hattah Lakes VEA) to improve visitor satisfaction and arrest decline in camper numbers.	Hattah–Kulkyne NP
Improve understanding of visitor expectations and requirements for different modes of camping, such as tent camping, RVs, camp trailers and caravans.	All
Explore options for ‘campground hosts’ at popular camping areas.	All
Provide better public information regarding camping, including information provided to visitor information centres and camping options during events, such as the Southern 80 ski race.	All
Improve camping infrastructure, including facilities, access (tracks and signage)	All
Provide camping Information for non–English speaking visitors.	All
Continue to liaise with councils and social service organisations to assist those using camping areas for emergency accommodation.	All
Explore options for providing access and facilities for recreational vehicles at appropriate sites, and the possible development of a ‘Murray River RV Touring Route’, highlighting suitable camping areas and RV-friendly towns.	All
Permit camping with horses and dogs in proposed Murray River Park and regional parks subject to assessment of potential impacts to park values.	proposed Murray River Park and regional parks
Investigate the feasibility of new camping offers of low impact, ecologically sensitive accommodation.	All

Table 7.2: Proposed types of camping opportunities in the River Red Gum Parks.

Park & VEA	Dispersed Camping	Camping Area	Campground	Visitor Site Maps
Gadsen Bend Park				
Gadsen Bend Park	Permitted			Map 5
Gunbower NP				
Gunbower	Permitted			Map 7
Kerang Lakes	Permitted	Wildlife Management Station		Map 7
Hattah–Kulkyne NP & Murray–Kulkyne Park				
Hattah Lakes	Permitted	Hattah Lakes – Lake Mournpall		Map 4
Kulkyne–Liparoo	Permitted	Billabong Bend, Sextons Bend and Tarpaulin Bend		Map 4
Kings Billabong Park				
Kings Billabong	Permitted			Map 3
Leaghur SP				
Leaghur	Not Permitted	Leaghur		Map 7B, C
Lower Goulburn NP				
Myers–Loch Garry	Permitted			Map 9
Simpson–Wyuna	Permitted			Map 9
Undera	Permitted			Map 9
Murray–Sunset NP				
Lindsay Island	Permitted			Map 2B
Mulcra Island – Lock 9	Permitted			Map 2B
Wallpolla Island	Permitted			Map 2B
Nyah–Vinifera Park				
Nyah–Vinifera	Permitted			Map 5
Warby-Ovens				
Lower Ovens	Permitted	Canoe trail with camping options		Map 6B
Warby Range	Not Permitted	Wenhams and Forest Camp		Map 12
Proposed Murray River Park				
Barmah Township	Permitted			Map 10
Belsar Island	Permitted			Map 5
Burra–Piambie	Permitted			Map 5
Cobram	Permitted (Except Cobram Township)	Big Toms Beach		Map 11
Cobrawonga	Permitted			Map 11
Corowa–Wahgunyah	Permitted			Map 13
Howlong	Permitted			Map 13
Kanyapella	Permitted			Map 8

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Table 7.2: (continued)

Park & VEA	Dispersed Camping	Camping Area	Campground	Visitor Site Maps
Proposed Murray River Park (continued)				
Karadoc–Iraak	Permitted			Map 3
Koondrook	Permitted			Map 7A, B
Merbein Common	Permitted	Delineated area for RVs		Map 3
Murrumbidgee Junction	Permitted			Map 5
Nangiloc–Colignan	Permitted			Map 3
Parolas (Western)	Permitted			Map 13
Parolas (Eastern)	Not Permitted	Camping areas on east side of Ovens R.		Map 13
Robinvale	Not Permitted	Punt Bend and Knights Bend		Map 5
Stantons	Not Permitted	Taylors Bend and Lumpys Bend	Stantons Bend	Map 13
Swan Hill – Pental Island	Permitted			Map 6
Tocumwal	Permitted (Except under Tocumwal main bridge)	Apex Beach		Map 11
Ulupna Island – Strathmerton	Permitted			Map 11
Wemen–Coreena Bend	Permitted			Map 5
Yarrowonga	Permitted except eastern end of Yarrowonga Common	Yarrowonga Common and Forges Beach		Map 11
Echuca				
Echuca–Torrumbarry	Permitted		Wills Bend and Farley Bend	Map 8
Echuca Township	Permitted (Except Between Wharparilla Drive and Echuca Village Reserve within and adjacent to town)			Map 8
Shepparton RP				
Arcadia–Murchison	Permitted			Map 9
Goulburn River–Shepparton	Permitted except Youngs Bend, Park Bend, Shepparton Causeway			Map 9
Other Areas				
Bumbang	Permitted			Map 5
Benjeroop	Permitted			Map 7A, B

Campfires

Campfires are an important part of camping for many people. Campfires, however, pose a number of risks. Campfire escapes are not uncommon and account for around 50% of River Red Gum bushfires since 2007. This poses a threat to other visitors, especially as many camping areas have limited access. Dense post-fire regeneration can prevent access to visitor areas and increases the incidence of trees and limbs falling, posing a further risk to campers. Fire regulations allow fires to be lit on the ground provided a set area is cleared of vegetation and a shallow pit dug. Many riverside areas have middens and other cultural values that are quite shallow in the soil profile and therefore susceptible to damage by this practice.

VEAC recommended that campfires not be permitted on public land adjoining the Murray, Ovens and Goulburn rivers during the fire danger period, as declared each year by the CFA (VEAC 2008). This reflects the policy operating in New South Wales, where solid-fuel fires are banned in many parks, including along the Murray River, during the peak of summer weather. The community argued that campfires should be permitted during the declared fire danger period as campfires are part of the camping experience. Campfires are currently permitted all year throughout the planning area, subject to relevant legislation.

The New South Wales – Victoria border is difficult to define on the ground but is generally the top of the Murray River’s southern bank. This means that many sandbars on the Victorian side of the river are in New South Wales, and Parks Victoria staff are not authorised to enforce fire restrictions.

Firewood collection poses a threat to habitat as it leads to removal of fallen logs and dead and alive standing trees, which provides habitat for a number of species, including small mammals, lizards and insects, which in turn affects higher predators such as birds and mammals. Firewood collection for use in the parks can also lead to illegal firewood collection for domestic use. Campers are encouraged to bring in firewood as part of their camping supplies.

Goal	
Campfires are permitted when and where it is safe to do so and where the impacts on environmental and cultural values can be minimised.	
Strategies	Park
Permit campfires along the Murray River visitor sites.	All
Provide fireplaces where required to protect natural and/or cultural values or prohibit campfires. Restrict campfires to fireplaces where provided.	All
Permit commercially manufactured gas- and liquid-fuelled barbecues and cookers all year.	All
Work with New South Wales National Parks and Wildlife Service to ensure coordinated enforcement of fire regulations. Seek authorisation of Parks Victoria staff to allow enforcement of New South Wales fire regulations.	proposed Murray River Park
Provide information on the impact of fires on cultural and environmental values.	All
Permit collection of firewood for campfires within the parks only. Areas from where firewood collection is permitted may be restricted to protect park values.	All other parks including proposed Murray River Park

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Boating on the Murray River at The Junction

Strategies	Park
Do not permit firewood collection for campfires.	Hattah–Mournpall Block, Warby Ovens
Encourage visitors to bring clean firewood (such as sawmill offcuts). Encourage local businesses to provide gas heater hire, cooking hire and other products for campers, including commercial firewood supply.	All

Boating

Access to the Murray River is a major attraction for many visitors, who use the river for fishing, water-skiing and swimming. There are a number of different water craft that are used throughout the planning area, depending on the type of watercourse, the restrictions on speed, and the provision of ancillary infrastructure such as boat ramps and car parking.

For the purposes of the management of watercraft and the ancillary facility provision required for their use, water users can be broken into four categories based on the watercraft used:

- houseboats — slow speed, wide watercourses, require a jetty
- ski boats — bigger boats, which go faster and which need higher quality boat ramps
- fishers — use small boats, low speed, can use ‘informal’ boat ramps
- canoeists/kayakers — smaller boats, can launch off a bank or jetty.

Canoeing, kayaking and rafting

Canoeing and kayaking are popular in the rivers and lakes of the planning area, especially when the lakes in Hattah–Kulkyne National Park are navigable. The rivers generally offer calm-water paddling and touring, exploring the River Red Gum environment. A number of canoe trails have been created. These activities generally require minimal facilities.

The proposed Murray River Adventure Trail includes improved access for canoes, kayaks and rafts and associated facilities, such as camping areas and vehicle access for support vehicles.

Parks Victoria engages with Canoeing Victoria, Maritime Safety Victoria, relevant NSW authorities and other stakeholders who have an interest in the sustainability of these activities.

Motorised boating

The River Red Gums Management Plan seeks to manage the operations for motorised vessels within the parks and reserves covered by the Plan. For the purposes of managing motorised vessels the planning area excludes the Murray River. Motorboats are permitted in navigable rivers in specific parks and reserves as indicated in Table 7.4.

There are numerous boat ramps and launching areas along the river and its tributaries, but many of these are earth ramps that have developed ad hoc over time. Managing these ramps so that they provide safe access to the river is resource-intensive. Some ramps may be upgraded to provide safe and sustainable river access, while others will be closed and rehabilitated. Upgrading ramps to comply with Australian standards will include, in some instances, providing or improving associated facilities, such as car and trailer parking, toilets and day visitor areas.

A speed restriction of 5 knots applies to all vessels on Victorian inland waters within 50m of the water's edge unless designated for other purposes (Transport Safety Victoria). In many waters such as rivers less than 100 m wide, speed restrictions make it unsuitable for some activities such as water skiing or jet skiing.

Lake Moodemere is a popular location for boating, including water-skiing and rowing. The lake offers calm waters good for water-skiing and rowing and is used by both the public and local water-skiing and rowing clubs. Parks Victoria is the designated waterway manager for the Lake Moodemere and is required to manage the waterway in accordance with the Marine Safety Act. Motorised boats and powered vessels are not permitted in other lakes or wetlands including Hattah Lakes.

Goal	
A range of boating experiences are provided with designated launch sites and supporting facilities to minimise adverse environmental and cultural impacts.	
Strategies	Park
Allow canoeing and kayaking on lakes and waterways within the planning area, except in reference areas and on declared wetlands during specified times during the duck hunting season. (<i>The waters of the Murray River, Lake Mulwala and Lake Hume are within New South Wales therefore NSW legislation applies on these waters.</i>)	All
Protect heritage river values and settings.	Goulburn & Ovens Heritage Rivers
Provide information on canoeing activities (distances, water levels, hazards etc.) on waterways managed by Parks Victoria.	All
Support existing canoe trails in Hattah Lakes VEA and Wallpolla Island VEA	Hattah–Kulkyne and Murray–Sunset NP
Investigate developing a canoe trail in the area of the Ovens River – Murray River confluence.	Lower Ovens WR
Continue to manage Lake Moodemere in accordance with Marine Safety Act requirements.	Moodemere LR
Liaise with New South Wales authorities to ensure a consistent approach to management of boating.	proposed Murray River Park and other parks
Maintain existing “fit for purpose” infrastructure and provide new ancillary infrastructure for water-based activities at boating sites and mooring zones that best meet demand and the protections of the natural environment	All
Work with GMW on future boating opportunities at Loch Garry WR.	Simpson–Wyuna

Fishing

Recreational fishing contributes significantly to the Victorian economy and supports the wellbeing of Victorians. The Victorian Fisheries Authority (VFA) is the accountable agency in Victoria for regulating recreational fishing and implementing the Victoria Governments' Target One Million plan. The VFA undertakes fish stocking programs across Victorian waters including the release of millions of native fish such as Murray Cod. Tens of thousands of native fish fingerlings have been released into waterways across the planning area as an resource for anglers.

The waters of the River Red Gum Parks are highly valued for recreational fishing. As the Murray River lies within New South Wales, a NSW Recreational Fishing Licence is required and New South Wales Department of Primary Industries manages fishing on the Murray River, including infrastructure on the river's southern bank.

Parks Victoria engages with VRFish, as the peak body representing recreational anglers in Victoria, as well as a diverse range of fishing clubs and associations, researchers and other stakeholders, to better understand issues around fishing and ensure that the activity is sustainable. Protecting water quality is essential for maintaining fishing opportunities. Continuing research into the ecology and biology of fish species in the Murray–Darling system by organisations such as the Arthur Rylah Institute for Environmental Research is a key element in understanding the sustainability of fish populations.

Fishing is permitted throughout the planning area, except in reference areas. People may access public land water frontages to fish, including areas of licensed for grazing. Digging for grubs and worms is not permitted in national, state or regional parks.

Goal	
Opportunities for sustainable fishing are provided.	
Strategies	Park
Work with VFA, VRFish and angling groups to support initiatives such as Adopt a Stream, fish recovery programs, and fishing platforms or boardwalks in high-use areas.	All
Ensure that the protection of water quality is a key consideration in the design and location of visitor facilities, such as camping areas and stream crossings, and in fire management.	All
Undertake assessment of boating infrastructure to determine priority works.	All
Work with New South Wales including NSW DPI, NSW local government, NSW Water and Goulburn Murray Water in managing infrastructure on the southern bank in alignment with statutory planning responsibilities for structures along the southern bank.	Murray River areas

Hunting

Recreational hunting is recognised to contribute significantly to the Victorian economy and the wellbeing of many Victorians. The Game Management Authority is the accountable agency for the regulation of recreational hunting. Within the planning area, firearms and recreational hunting is not permitted in any national, state or regional parks, education areas or nature conservation reserves (includes wildlife reserves (no hunting) and flora and fauna reserves, historic reserves and most bushland reserves). Recreational hunting is permitted within the planning area within state game reserves, historic areas and some bushland reserves, lake reserves, streamside reserves and unreserved Crown land or state forest (table 7.3).

The planning area includes 26 state game reserves managed under the Wildlife Act which provides opportunities for duck hunting and the protection of game and game habitat. Duck hunting is permitted in these state game reserves during declared open seasons, except any reserves which may be designated as closed in some years. Declared wetlands are closed to other visitors during specified times during the duck season. Recreational hunting for other game species (such as quail or deer), or feral or pest animals, is not currently permitted within these state game reserves. The Victorian Government's *Sustainable Hunting Action Plan 2016–2020* (DEDJTR 2016b) is looking at a number of ways to improve the opportunities for hunting across the state. This includes reviewing pest hunting within state game reserves.

Recreational hunting may currently continue in the areas of the proposed Murray River Park where hunting is not already prohibited. When that park is formally created, hunting may continue subject to the establishment of designated hunting areas. In parts of the proposed Murray River Park where hunting may become prohibited in the future, firearms will continue to be allowed to be carried in vehicles provided they are unloaded and concealed. This will allow hunters to travel through these areas to access designated hunting areas.

Depending on the tenure of the land, dogs may be used to hunt game (duck, quail, deer) and pest animals. Parks Victoria acknowledges the value of this component of the experience for some hunters. Therefore, the inclusion of hunting dogs to the hunting experience is supported where consistent with land status.

Dogs used in hunting game must be recognised breeds under the Wildlife (Game) Regulations 2012 and must remain under effective control at all times. The use of gun dogs in hunting will continue in designated hunting areas when the proposed Murray River Park is created. Game regulations do not apply to dogs engaged in pest hunting.

Duck hunting near populous areas is causing concern for nearby residents. For example, the community of Merbein adjacent to Merbein Common, is a popular hunting area, and stray shot has been reported in nearby residential areas. Campers and other recreation visitors also use the area and concern has been raised regarding public safety risks. Similar issues have been raised in other areas where hunting is permitted close to residential areas or popular camping areas, such as Parolas VEA and Baillieu Lagoon Wildlife Reserve.

Parks Victoria has established agreements with the Australian Deer Association, Sporting Shooters Association of Australia and Field and Game Australia to facilitate cooperation including their participation in coordinated animal control programs.

Table 7.3: Proposed hunting areas and conditions.

Park category	Duck	Quail	Deer	Pest animals
Streamside reserves	Permitted during open seasons	Permitted during open seasons	Permitted during open seasons	Permitted all year
Lake reserves	Permitted during open season	Permitted during open season	Permitted during open season	Permitted all year
State game reserves	Permitted during open season	Hunting not permitted	Hunting not permitted	Hunting permitted during open season
Historic areas i.e. Bumbang HA	Permitted during open season	Permitted during open season	Permitted during open season	Permitted all year
Historic reserves i.e. Koondrook HR	Hunting not permitted	Hunting not permitted	Hunting not permitted	Hunting not permitted
Bushland reserves	Hunting not permitted, except at Sandhill Lake BR			
National parks	Hunting not permitted			
State and other parks	Hunting not permitted			
Regional parks	Hunting not permitted			
Nature conservation reserves	Hunting not permitted			
Education areas	Hunting not permitted			
Proposed Murray River Park	Hunting permitted but subject to park establishment, after which hunting will continue in designated hunting areas			

Goal
Opportunities for sustainable hunting are provided.

Strategies	Park
Permit hunting in areas as specified in table 7.3.	As per table 7.3
Work with the community, hunting organisations, Police and the Game Management Authority to confirm or designate appropriate hunting areas and to ensure hunting etiquette and compliance in and around populated areas where hunting occurs, and provide appropriate signage to make hunters and public aware of safety issues.	Proposed Murray River Park, Merbein Common
Investigate options to allow camping with dogs within designated areas in Lower Ovens Wildlife Reserve during duck season.	Lower Ovens Wildlife Reserve
Allow boat ramp and river access for non-hunters within designated areas in Lower Ovens Wildlife Reserve during the duck season.	Lower Ovens Wildlife Reserve
Implement the relevant actions of the Victorian Government's <i>Sustainable Hunting Action Plan 2016–2020</i> , including: <ul style="list-style-type: none"> • Improve hunting location knowledge by improving signage at state game reserves and other public land where hunting is permitted. • Explore options to expand hunting in partnership with Traditional Owners, land managers and relevant stakeholders. • Explore opportunities for game licence holders to hunt pest species at state game reserves, subject to appropriate pest control protocols. • Improve physical access to state game reserves. • Improve state game reserve habitat. 	All

Bushwalking

The River Red Gum forests of the Murray, Ovens and Goulburn river valleys offer limited opportunities for extended hiking, with walking generally restricted to short walks around camping and day visitor areas. Beyond the river valleys, Hattah–Kulkyne National Park and the Killawarra and Warby Range sections of Warby–Ovens National Park offer opportunities for longer day walks. There are no defined overnight walks at present. The proposed Murray River Adventure Trail will provide opportunities for longer and overnight walks (see table 7.4) Parks Victoria liaises with Bushwalking Victoria, as the peak body representing recreational walking and many walking clubs within Victoria, regarding management of walking opportunities. Bushwalking is permitted throughout the planning area with the exception of reference areas.

Goal	
A range of walking trails are provided, from short walks associated with day visits and camping to longer walks.	
Strategies	Park
Provide information about available walking opportunities at popular camping and day visitor areas.	All
Investigate options for extended overnight walks, possibly associated with canoe trails and proposed Murray River Adventure Trail	Hattah–Kulkyne NP, Warby–Ovens NP, Lower Goulburn NP, Gunbower NP, Shepparton Regional Park and proposed Murray River Park

Cycling and mountain biking

Cycling and mountain biking are fast-growing activities permitted on all open roads and management vehicle only tracks, other than those in reference areas. Park Victoria works with Bicycle Network, which is the peak body representing cycling, and Mountain Bike Australia (MTBA). These organisations have agreements with Parks Victoria that recognise the need to work together to manage these activities.

The Warby Ranges and Shepparton Regional Park are popular with local mountain cyclists, who use some of the walking tracks in the national park for cycling.

Goal	
Cycling opportunities are provided.	
Strategies	Park
Provide information about available cycling opportunities at popular camping and day visitor areas.	All
Investigate opportunities for extended cycling routes associated with the Murray River Adventure Trail.	All
Investigate cycling options within Warby Ranges, including use of walking tracks. Maintain and improve the Friends Track for multi-use track. Creation of new and change of use of tracks subject to assessment of the impacts of Phytophthora transference, and the impacts of cycling on park values and other visitors.	Warby–Ovens NP
Investigate cycling options around regional destinations around Echuca and Shepparton townships	Shepparton RP, River Murray Reserve

Trail bike riding

Trail bike riding is a popular activity on roads and tracks open to the public throughout the planning area. Bikes must be registered and riders licensed. However, illegal off-road trail bike riding poses risks of damage to environmentally sensitive sites and to cultural sites. Trail bike riding often produces high levels of noise, which can disturb other park users, neighbours and animals. Trail bikes can also adversely affect the condition of roads and tracks, although to a lesser extent than four wheel drive vehicles.

Goal	
Trail bike riding is permitted on open roads and tracks.	
Strategies	Park
Permit trail bike riding on formal roads and tracks throughout the planning area, except those designated as being for management vehicles only.	All
Do not permit off-road riding or trail bike riding on walking tracks.	All, with priority for education and enforcement in high-value areas
Work with other authorities and land managers, including police and local government, to enforce current restrictions on illegal trail bike riding.	All

Horse riding

Horse riding is a popular activity and is permitted on formal roads and tracks within regional parks and the proposed Murray River Park. Camping with horses is also allowed in these areas.

Goal	
Horse riding is permitted on open roads and tracks.	
Strategies	Park
Permit horse riding on formal roads and tracks, except those designated as being for management vehicles only, subject to seasonal or emergency closures	Regional parks, proposed Murray River Park and other reserves
Identify areas popular for camping with horses	Regional parks, proposed Murray River Park and other reserves

Dog walking on lead

One of the most popular physical activities for Australians is walking with a dog. According to the RSPCA, 39% of Australian households own a dog, with more than 4.2 million dogs in Australia. Further, according to the latest Ausplay data, 48% of Australians participate in walking on a regular basis, making it the most popular physical activity. The walking of dogs therefore is highly popular. In regards to the planning area the activity can be undertaken by multi-day visitors who camp with their dogs, day visitors who travel with their dogs and by walkers who enter from nearby settlements.

There are a number of parks and reserves within the planning area that border or are close to settlements. The walking of dogs takes place primarily in peri-urban parks and reserves that are close to settlements, which visitors access from their homes on foot, or by short drives. Dogs will remain prohibited from National Parks and conservation reserves including wildlife reserves and flora and fauna reserves. Table 7.4 outlines those tenure classifications where the walking of dogs on leads is permissible.

Local governments provide enforcement mechanisms through their local by-laws for those tenures under their management.

Goal	
Dog walking on lead is permitted within designated parks and reserves.	
Strategies	Park
Permit walking with dogs on lead in parks and reserves as stipulated in Table 7.4 and detailed in the specific VEAs.	Regional parks, proposed Murray River Park and other reserves
Review areas with the view of providing opportunities for dog off leash activities in accordance with current legislation.	Regional parks, proposed Murray River Park and other reserves
Permit the use of hunting dogs in areas open to hunting identified in table 7.3.	See table 7.3

Fossicking and prospecting

Where permitted, fossicking and prospecting for minerals are regulated under the *Mineral Resources (Sustainable Development) Act 1990* (Vic.) and permitted under a miner's right or tourist fossicking authority. Fossickers and prospectors are required to use non-mechanical hand tools, and must not disturb vegetation, archaeological sites or Aboriginal places or objects. Fossickers and prospectors are encouraged to follow the *Prospecting Guide* (DPI 2004) and the Prospectors and Miners Association of Victoria and Victorian Gem Clubs Association code of conduct. Fossicking and prospecting is permitted only in some parts of the planning area (DSE 2003) (see table 7.4).

Goal	
Fossicking and prospecting are permitted in designated areas.	
Strategies	Park
Permit fossicking and prospecting in designated areas.	As per table 7.4

Birdwatching

The wetlands and forests of the River Red Gum Parks are ideal for birdwatching, especially when wetlands are filled after good winter rains. Hattah–Kulkyne and Murray–Sunset national parks are particularly popular because of the opportunity to see elusive birds such as the Malleefowl, Regent Parrot and Mallee Emu-wren.

The wetlands in the parks and reserves include sites in Gunbower and Hattah–Kulkyne national parks and Kerang Regional Park listed under the Ramsar Convention for their international importance as habitat for migratory birds, which are popular with birdwatchers. Barmah National Park, outside the planning area, is another popular Ramsar-listed birdwatching area. Some parks, such as Kings Billabong Park, offer facilities such as bird hides and information boards for birdwatching.

Most birdwatching is undertaken by individuals or organised special-interest groups, such as Birdlife Australia and field naturalists groups; however, several businesses offer organised birdwatching tours, ranging from one to several days, in the planning area.

The Tri-Avian Corridor, a joint birdwatching trail project by three councils on the New South Wales side of the Murray River, is popular with birdwatchers. A similar trail could be developed on the southern side of the river, including suitable sites in the River Red Gum Parks.

Goal	
Birdwatching is supported throughout the River Red Gum Parks.	
Strategies	Park
Provide opportunities for birdwatching, including infrastructure such as bird hides and information about birdwatching sites.	Hattah–Kulkyne, Kings Billabong, Merbein Common, Shepparton Regional Park, Lower Goulburn NP, Loch Garry WLR, Kerang Lakes, Gunbower NP
Liaise with Birdlife Australia, similar special-interest groups and birdwatching tour operators about management of birdwatching opportunities.	Ramsar sites
Investigate the feasibility of developing a birdwatching trail.	Hattah–Kulkyne, Merbein Common, Kerang Lakes, Shepparton RP, Lower Goulburn NP

New and emerging sports and activities

A range of other sports and activities, such as geocaching, take place on public land, and others may emerge in the future. Provided they can be undertaken without adversely affecting park values or creating a risk or disturbance to other visitors, they are generally acceptable.

Launching and landing remotely piloted aircraft (drones) is prohibited in parks managed under the National Parks Act 1975, and in many other parks.

Where an activity starts to affect values through increased popularity or poor practices, Parks Victoria will manage the activity and seek to liaise with organisations representing participants.

Table 7.4: Summary of activities.

	Gunbower National Park	Hattah–Kulkyne National Park	Lower Goulburn National Park	Murray–Sunset National Park	Warby–Ovens National Park	Leaghour State Park	Gadsden Bend Park	Kings Billabong Park	Murray–Kulkyne Park	Nyah–Vinifera Park	Shepparton Regional Park	Kerang Regional Park	Prop. Murray River Park	Nature conservation reserves	Natural features reserves	State game reserves	Historic areas & reserves
Boating: canoe, kayak, raft	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Temporary and seasonal closures may apply in areas subject to flooding.																	
Boating: motorised craft/powerised vessel *	N	N	C	N	C	N	N	N	N	N	C	N	Y	N	Y	C	N
*Motorised craft conditions listed do not apply in the Murray River as Parks Victoria does not manage these waterways. The waters of the Murray River, Lake Mulwala and Lake Hume are within New South Wales therefore NSW legislation applies on these waters. C - A speed restriction of 5 knots applies to all vessels on Victorian inland waters within 50 m of the water's edge unless designated for other purposes.																	
Bushwalking	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Campfires	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
Solid-fuel fires only permitted in properly constructed fireplaces subject to relevant legislation. Where fireplaces are provided, solid-fuel fires are restricted to these. Firewood collection is not permitted in Conservation Zones.																	
Camping: with horses	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	N	Y	N	N
Permitted in designated horse camping areas* only.																	
Car rallying	N	N	N	N	C	N	N	N	N	N	N	N	N	N	N	N	N
Warby–Ovens NP: Time-trial rallying within road rules permitted in Killawarra Block only.																	
Car touring	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Access subject to closure for emergency and public safety reasons.																	
Cycling	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Permitted only on open tracks and roads. Subject to seasonal and emergency closures.																	
Dogs	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	N	Y	C	Y
Where allowed, dogs must be on lead and under control at all times when not inside a vehicle. Not permitted in nature conservation reserves other than Gemmill Swamp WR , where dogs are permitted.																	
Fishing (recreational)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Recreational fishing licence required. Fishing on Murray River requires a New South Wales fishing licence.																	
Fossicking and prospecting	N	N	N	N	C	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y
Prospecting is permitted only in a small area in the Killawarra section, 200 m either side of Tarrawalla Track. Prospectors may only search for gemstones, in particular wavelite. A fossicker or prospector must hold a miner's right																	
Horse riding	N	N	N	C	N	N	Y	Y	C	C	Y	Y	Y	N	Y	Y	Y
Permitted on vehicle tracks and roads only, subject to seasonal and emergency closures. Murray–Sunset NP: Permitted on vehicle tracks on Wallpolla Island only. Nyah–Vinifera Park: Club events permitted subject to a permit. Murray Kulkyne in Liparoo.																	

Note: See table 7.3 for hunting activities.

Y = Yes, N = No, C = Conditional



Canoeing and kayaking are popular tourist activities in the River Red Gum Parks

7.4 Tourism

‘While Victoria’s nature-based tourism industry is thriving, it is also highly vulnerable to the future impacts of environmental degradation and climate change. Parks and tourism must be managed to ensure that environmentally sensitive visitation rates are maintained so that parks aren’t receiving too many visitors in sensitive areas.’ (DELWP 2015a).

The Murray Regional Tourism Board (MRTB 2013) identified the following experiences as being most likely to generate additional visits to the region:

- escaping into the natural world
- history and heritage products
- adventure trails along the Murray River
- touring routes along the length of the river.

The community has expressed a preference to retain the parks’ undeveloped character, although there are some expectations for high-quality facilities (River Red Gum Community Engagement Panel 2008). This plan aims to manage the parks sustainably, maintaining the existing experiences and complementing the services and experiences available on other land in the region, including major towns.

There is an expectation that numbers of overnight and day visitors to the region will continue to increase (DEDJTR 2016a). Given the ageing infrastructure, active management is required. Management of visitor activities and experiences are prioritised within the visitor experience areas, which are described in section 7.1. Nearby towns offer a wide range of accommodation options and services that support park visits.

The *Murray Regional Tourism Strategic Plan 2015–2020* (MRTB undated) covers the Murray River valley section of the planning area and notes that the current tourism strengths are caravanning and camping, golf, history and heritage, adventure and water sports and food and wine. Visitation was predominantly domestic, with over five million domestic visitors compared to 53 000 international visitors.

The *Murray Region Tourism Destination Management Plan* (MRTB 2012) notes that ‘the natural attributes of the region, although significant, are not prominent in the tourism market’. As a consequence, the experiences that are considered to have the greatest potential for growth are nature tourism, touring routes and history and heritage — experiences that the parks and reserves of the Murray Valley are integral to.

Key opportunities identified by the tourism board include:

- improved access to the river, including boating facilities, fishing platforms and canoe landings
- trails along the rivers and connecting towns, such as the Murray Valley Trail Touring Route and Murray River Adventure Trail (see box: Murray River Adventure Trail)
- improved camping and visitor facilities, such as defined camping and day visitor areas
- interpretation of Aboriginal values through Traditional Owners.

Warby–Ovens National Park falls within Tourism North East’s area. *Victoria’s High Country Destination Management Plan 2013–2023* (Tourism North East 2016) discusses tourism in this area. The Warby Ranges and Ovens River are not noted as major tourism attractions, as much of the emphasis is on the high country and the upper Ovens and Kiewa river valleys.

A 2013 study into Traditional Owners and tourism along the Murray River valley commissioned by Parks Victoria noted that the tourism hubs with the greatest potential were Echuca, which can serve as a base for exploring Barmah and Gunbower National Parks as well as Murray Valley National Park in New South Wales, and Mildura, as a base for exploring Hattah–Kulkyne National Park, Kings Billabong Park and Merbein Common (TRC 2013). Mildura is already a starting point for Aboriginal heritage–based tours to Mungo National Park in New South Wales, around 120 km to the north-east, as well as offering potential for tours into Victoria’s Mallee region. The study made a number of recommendations, which are supported in this plan.

The Victorian Department of Economic Development, Jobs, Transport and Resource (DEDJTR) undertakes research and provides policy guidance on tourism, events and the visitor economy. It works closely with Visit Victoria and the tourism industry to develop tourism within Victoria, including identifying tourism opportunities across the state.

Mobile vending providers, who sell perishable goods to campers, have become more prevalent in recent times, especially in camping areas near settlements. Campers find the convenience of these providers reduces the need to drive into towns to buy goods such as groceries and ice.

Parks Victoria views these services as a means to increase visitor services, improving the visitor experience and opening the parks to a diversified visitor base. At the same time supporting these services will provide commercial opportunities for small businesses in both urban and regional locations and will help support the local economy. Finally, in support of Parks Victoria’s motto of “Healthy Parks, Healthy People” the provision of these services helps to support healthy eating guidelines and allows park visitors to incorporate and plan for healthy food choices into their diet whilst camping in the parks estate.

Goal

Sustainable nature-based tourism experiences around nature, wildlife, life on the river, Aboriginal culture and cultural heritage are supported to generate opportunities for economic and social benefits to communities, including Traditional Owners.

Strategies

Park

Continue to work with local government and tourist information providers to encourage use of agreed Aboriginal names for places and features.

All

Support implementation of strategies and actions outlined in the *Tourism Planning with Traditional Owners – River Red Gum Parks, Victoria* report, including:

All

- working with an Aboriginal tourism consultative committee comprising Traditional Owners and tourism stakeholders
- working with New South Wales National Parks and Wildlife Service to foster cross-border opportunities
- establishing exclusive Traditional Owner tour areas and products.

Host park visits for regional tourism stakeholders to familiarise them with park opportunities, and to explore the role of the park in complementing regional tourism products and experiences.

All

Work with Visit Victoria, Murray Regional Tourism, shires and local tourism associations to:

All

- promote nature-based tourism destinations and experiences in combination with other regional tourism strengths
- identify and encourage off-park business opportunities (e.g. accommodation) that benefit from and leverage park assets.

Encourage licensed tour operators to expand the range of activities and locations, and support more ways in which visitors can undertake them.

All

Support Traditional Owners and Aboriginal businesses delivering nature-based tourism services.

All

Assist licensed tour operators to work with Traditional Owners.

All

Recognise adjacent communities, such as Mildura, Robinvale, Swan Hill, Echuca, Shepparton, Cobram, Yarrawonga] and Wangaratta, as key elements of the visitor experience and economies

All

Work with local council and tourism bodies to investigate developing an RV touring route with RV-friendly camping areas in suitable parks supported by RV-friendly towns.

All

Investigate the feasibility of new types of accommodation, such as safari tents, and after-dark and early-morning tours.

Hattah–Kulkyne NP,
Kings Billabong Park

Investigate the feasibility of new types of low impact, ecologically sensitive accommodation.

All

continued on next page

Strategies	Park
Work with Murray Regional Tourism, shires and other land managers to implement the Murray River Adventure Trail (Table 7.1 Visitor Experience Areas), as well as specific canoe trails and shared-use trails along the river front.	All
Investigate demand and feasibility for developing mountain bike opportunities in the Warby–Ovens National Park.	Warby–Ovens NP
Investigate demand and feasibility for developing Lower Ovens canoe trails and camping.	Warby–Ovens NP
Ensure that licensed tour operators and other groups adhere to appropriate standards for their activity, such as Adventure Activity Standards, including group sizes.	All
Work with stakeholders, including local government authorities to develop an overarching policy and legislation that governs mobile vendors throughout the planning area	All
Identify suitable sites within the park estate for mobile vendors to operate	All
Promote to campers the availability of mobile vendors at specific sites	All
Work in partnership with DELWP, CMAs, shires and the tourism industry in managing and communicating disruptions (such as fires, floods, algal blooms), as well as safety messages and opportunities from environmental watering.	All



Dousing an unattended campfire,
Murray River Park

7.5 Risks and safety

Parks Victoria undertakes risk mitigation works throughout the parks estate, ensuring buildings and facilities are maintained to the required standards. Lookouts, boat ramps, picnic facilities, toilets and other public infrastructure need to be assessed to determine whether they comply with safety standards. Those that do not must be upgraded, replaced, withdrawn from public use or demolished. Licences may also be required for some currently unlicensed infrastructure.

River recreation presents a number of risks. Strong currents, submerged objects and shallow water all pose a risk for swimming and diving. Less obvious risks include falling into the river and not understanding how the river can change in depth and current. Some activities, such as rope swings, increase the danger. The riverine environment also poses other risks, such as trees dropping limbs.

A number of mosquito-borne viruses, such as Ross River Virus and Barmah Forest Virus, are found in the study area. The State Government has developed a *Framework for Mosquito Management* (DSE 2004b) to ensure an integrated approach between government agencies, including Parks Victoria, and local councils is implemented where mosquito numbers pose a health risk.

There are a number of other biological hazards that present themselves in the planning area. One of particular note is blue-green algal blooms. Blue-green algae occur naturally in many waters but under certain conditions can increase in number creating an 'algal bloom'. Waters containing a bloom pose a risk to humans and stock.

Visitors need to be aware of these potential risks and be responsible for their own actions. Parks Victoria provides pre-visit and on-site information to increase visitors' awareness of these risks and promote safe behaviour.

Parks Victoria is a support agency for bushfire, search and rescue, road incidents and biohazard response, and a control agency for waterway pollution. Parks Victoria is responsible for response to flood rehabilitation, such as clearing and restoration of roads and other assets in parks. Emergency management plans are prepared for all parks across the state. These plans are developed in consultation with other emergency agencies and integrated with municipal

emergency management plans. They provide procedures for responding to a range of emergency situations, such as search and rescue, fire, flood and visitor behaviour problems.

Compliance

The majority of visitors to the parks act in a safe and responsible manner, abiding by codes of conduct and park regulations. However, illegal activities, such as driving on closed roads, riding unlicensed trail bikes on roads, dumping wastes, firewood collection for domestic purposes and fishing without a licence, as well as antisocial behaviour such as littering and excessive noise, can significantly affect other visitors' experiences as well as public safety and park values. Enforcement of laws and regulations is undertaken by park rangers. Victoria Police and authorised DELWP officers are called on from time to time to augment routine patrols with coordinated compliance and enforcement operations.

The community is encouraged to report any observations of illegal activity. This reporting can help Parks Victoria target patrol and enforcement operations.

Goal	
Safety incidents and impacts on visitors and staff are minimised.	
Strategies	Park
Maintain facilities in a condition that allows for safe use.	All
Ensure visitors are aware of risks and hazards associated with key sites and activities.	All
Liaise with the local councils and agencies to facilitate biohazard monitoring and response to protect human health.	All
Work with recreational groups to encourage and promote safe, legal practices, training and awareness of relevant codes of practice relating to visitor safety.	All

Goal	
Emergency incidents are responded to in a timely, appropriate and coordinated manner.	
Strategies	Park
Develop and maintain emergency management plans for all parks.	All
Ensure staff are prepared and trained to respond appropriately to emergency and compliance situations.	All
Ensure access, signage and mapping are maintained to a standard that supports compliance and efficient emergency response.	All



Parks Victoria firewood compliance checkpoint

7.6 Authorised uses

Many areas of the River Red Gum Parks are important for a range of public uses, including grazing, forestry, firewood collection, apiculture, energy transmission, communications, mining and water supply (table 7.5). Authorisation and management of these private and public uses is undertaken in accordance with applicable legislation.

Initial approvals for most proposed uses by third parties within parks and reserves are required under the *Planning and Environment Act 1987* (Vic.). Unless specifically exempted, such proposals require consent from the land manager as a prerequisite to applying for a planning permit from the relevant municipal council.

Some uses will also require a Cultural Heritage Management Plan in accordance with the Aboriginal Heritage Regulations 2007, and may trigger additional approvals under other legislation.

Grazing

In 2015, the Victorian Government legislated that cattle grazing will not occur in River Red Gum Parks established under the National Parks Act 1975, however grazing will continue in the proposed Murray River Park until such time as Governor in Council creates the park. The future of grazing will be determined at that time.

The National Parks Act 1975 permits some livestock movement through Murray–Sunset, Lower Goulburn and Warby–Ovens national parks. This enables livestock to be moved to freehold land surrounded by or adjoining the parks which is not otherwise easily accessible. A few licensed unused road reserves will continue to be available for the movement and grazing of stock, except where access may be required for another use in the future.



Apiary site,
Hattah-Kulkyne National Park

Apiculture

Many areas of the planning area are important for the production of honey. The Victorian Government recognises the importance of the honeybee industry and supports beekeeping on public land except within 0.8 km of the boundary of a reference area, wilderness park or wilderness zone. However, the principles of 'avoid, minimise and offset' for native vegetation removal apply to proposals for new sites.

Any person is able to apply for an apiary licence on any public land except in reference areas, wilderness zones or wilderness park. Applications for new sites may be denied where there are clear conflicts with significant park values. However, the government's policy for apiculture on public land (DEPI 2014), which describes how apiculture is to be managed, indicates that there are no known negative impacts of beekeeping on biodiversity values. Bee site proposals rarely require a planning permit, but new sites with native vegetation impacts may not be exempt.

Feral honeybees can pose a threat to native fauna through competition for nesting hollows and nectar. Threats to native flora and fauna arising from the use by the feral honeybee *Apis mellifera* of nesting hollows and floral resources is listed as a threatening process under the Flora and Fauna Guarantee Act.

Earth resources

Parks and reserves within the plan area have traditionally been commercially utilised for materials such as gravel, stone and salt, and minerals such as gypsum and mineral sands. VEAC recommended that most existing operations continue under prior arrangements.

New extractive and mining proposals may be licensed in parks and reserves other than those established under the National Parks Act 1975, subject to an assessment of impacts on biodiversity and social values. Such proposals are exempt from a planning permit, but do require a licence from DEDJR as well as consent under the Mineral Resources (Sustainable Development) Act. VEAC recommended that public land should not be cleared for new extractive operations where similar resources occur on private land.

Gravel and stone extraction for park management purposes occurs occasionally within the planning area. These sites are rehabilitated when no longer required.

Firewood and timber resources

The provision of domestic firewood from the River Red Gum Parks is not sustainable in the long term. Firewood supplies are already exhausted across the bulk of the planning area. However, there is some capacity for those Red Gum forests, including within the proposed Murray River Park, in the vicinity of Robinvale to supply domestic firewood for up to 20 years. This capacity is based on modest local annual consumption of six cubic metres per household and assumes that the productivity of the forest will not be diminished by impacts such as fire, disease or increased firewood demand.

Under current regulation, domestic firewood collection may only be permitted subject to the designation of firewood collection areas in the proposed Murray River Park and other areas of the River Red Gum forests outside the planning area during designated firewood collection seasons. The designation of firewood collection areas within the above mentioned parks is dependent on the availability of wood and the cost-effectiveness of production. (Parks Victoria will aim for cost-neutrality.)

The areas where firewood can be collected will be identified and published each season. Domestic firewood collection outside the designated areas and seasons is prohibited.

The River Red Gum Forests Investigation (VEAC 2008) and associated government response, together with DELWP's Northern Victorian Firewood and Home Heating Report (DELWP 2018) provide policy guidance in regard to the production and supply of domestic firewood from Northern Victorian River Red Gum forests.

Public and private infrastructure

Public utilities such as power lines, roads, communications towers, irrigation channels, weir infrastructure, water regulators, boat ramps and levee banks, and private assets including pumps, pipelines and private jetties, exist throughout the planning area. Access to the western section of Fosters Swamp in Kerang Regional Park may be restricted to allow use by Lower Murray Water as an outfall for tertiary sewage and drainage. These are managed to minimise the impact on biodiversity and social values.

Proposals for new public utilities and private assets will be considered only if they cannot be located outside the River Red Gum Parks, as per VEAC recommendations. Most new infrastructure will require a planning permit, as well as an authorising licence.

Some boundary fencing between parks and private property is not on the correct, legal alignment and in some cases the legal alignment is not practicable.

Koondrook Historic Area includes a number of significant sites, such as Arbuthnot Mill (which is still operational) and a residence and gardens that are still in use. These occupations will continue to be allowed, provided they are sympathetic to the reserve's purpose of protecting the area's historic and cultural values.

The Defence Forces, State Emergency Service, Victoria Police and other groups occasionally use the planning area for training purposes. Education is also an important use, through schools or specialist education providers.

The parks are also subject to a range of other uses, such as scientific research, cycling races, canoeing events, commercial tours, and commercial filming and photography. The majority of

these uses require a permit from Parks Victoria, but some may require additional permission under local council planning schemes. Large public events can raise issues relating to things such as litter management, sewage and emergency access.

In addition, sponsors seeking to establish private or public infrastructure must undertake any works in accordance with the Aboriginal Heritage Act and this is particularly critical for activities in cultural landscapes with a high risk of disturbance to Aboriginal burials and ancestral remains.

Access to private property

Parks Victoria recognises that a number of private properties are accessed via Parks Victoria managed roads through the parks and reserves and that in many cases these roads provide the most practical access. However, from time to time these roads and tracks may be temporarily closed for public safety, such as during bushfire or floods, or for park management. During these road closures access to private property may be restricted or even prohibited. Parks Victoria will strive to give adequate notice to affected parties of such closures.

Goal Authorised uses are managed to minimise impacts on park and reserve values and visitors.	
Strategies	Park
Manage all existing authorised uses and new applications in accordance with the appropriate policy, procedures and legislation (table 7.5).	All
Liaise with apiculturists to assist in identifying and removing feral bee populations as soon as practicable.	All
Review all existing uses to ensure an appropriate authorisation has been issued and maintained, such as for the Arbuthnot Mill and adjacent residence and gardens (Koondrook Historic Area).	All
Continue to permit use of existing and licensed pump and pipeline sites, and work with Goulburn–Murray Water and other agencies on applications for new pump and pipeline sites.	proposed Murray River Park
Continue to produce firewood and facilitate its collection for domestic use subject to regular (e.g. five yearly) review in terms of both availability of wood and cost-effectiveness of firewood production.	proposed Murray Park (Around Robinvale)
Review access to river frontages, including collaborating with NSW authorities to review private jetties access	proposed Murray River Park and other parks and reserves with river frontages.
Ensure and promote equitable private building occupancies use, including opportunities for use by Traditional Owners, schools, clubs and other groups with cultural connections.	All

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Strategies	Park
Permit events in accordance with the appropriate policy, procedures and legislation. Include conditions as required to cover protection of cultural heritage, litter and waste management (such as 'no glass', 'minimal glass' or on-site glass collection for recycling), additional public facilities (such as toilets) and emergency response.	proposed Murray River Park and other parks and reserves with river frontages.
Direct the owner of wandering stock to remove stock from parks and reserves as soon as detected; impound stock if necessary.	All
Reduce the impacts of licensed grazing on coarse woody debris, hollows and understorey.	proposed Murray River Park and other parks and reserves with river frontages.
Survey park boundaries and work with neighbours and councils to ensure fencing is on an appropriate alignment. Licence council assets that are on Parks Victoria land.	proposed Murray River Park, Lower Goulburn NP, Shepparton Regional Park, Arcadia Streamside Reserve and other parks and reserves with river frontages.
Where practical access to private property is through a park or reserve, establish an access agreement with the landholder, noting that Parks Victoria will manage the road to a standard required for Parks Victoria's purposes, and that this may include the right to close roads for emergencies, safety or other management purposes.	proposed Murray River Park and other parks and reserves with river frontages.
Ensure licensing of authorised uses adequate considers compliance with the Aboriginal Heritage Act.	proposed Murray River Park and other parks and reserves with river frontages.

Table 7.5: Summary of main authorised uses.

Park or reserve	Apiculture	Firewood collection (domestic)	Mining	Grazing
National parks				
Gunbower NP	✓	✗	✗	✗
Hattah–Kulkyne NP	✓ ¹	✗	✗	✗
Lower Goulburn NP	✓	✗	✗	✗
Murray–Sunset NP (part)	✓ ¹	✗	✗	✗
Warby–Ovens NP	✓ ¹	✗	✗	✗
State parks				
Leaghur SP	✗	✗	✗	✗
Other parks				
Gadsen Bend Park	✓	✗	✓ ³	✗
Kings Billabong Park	✓	✗	✓ ³	✗
Murray–Kulkyne Park	✓ ¹	✗	✓ ³	✗
Nyah–Vinifera Park	✓	✗	✓ ³	✗
Regional parks				
Shepparton RP	✓	✗	✓ ³	✗
Kerang RP	✓	✗	✓ ³	✗
proposed Murray River Park	✓	✓ ²	✓ ³	✓ ⁴
Nature conservation reserves				
Nature conservation reserves	✓	✗	✓ ³	✗ ⁵
Wildlife reserves (no hunting)	✓	✗	✓ ³	✗ ⁵
Flora and fauna reserves	✓	✗	✓ ³	✗ ⁵
Natural features reserves				
Bushland reserves	✓	✗	✓ ³	✗ ⁵
Education areas	✓	✗	✓ ³	✗ ⁵
Lake reserves	✓	✗	✓ ³	✗ ⁵
Scenic reserves	✓	✗	✓ ³	✗ ⁵
Streamside reserves	✓	✗	✓ ³	✗ ⁵
Wildlife reserves (state game reserves)	✓	✗	✓ ³	✗ ⁵
Historic and cultural features reserves				
Historic areas	✓	✗	✓ ³	✗ ⁵
Historic reserves	✓	✗	✓ ³	✗ ⁵

NOTES

- ¹ Not in reference areas.
- ² May be permitted subject to designation of firewood collection areas, in firewood collection areas during firewood collection seasons only.
- ³ Exploration and mining for minerals and searching for and extraction of stone resources subject to the consent of the Crown Land Minister under the relevant legislation.
- ⁴ Grazing will continue subject to park creation conditions.
- ⁵ Grazing may continue subject to licence conditions.



Celebrating NAIDOC Week

8 Engaging with Country

Awareness of the parks' values is growing through education, information and community involvement, increasing the community's connection and enjoyment and building deeper respect for the parks. *Healthy Parks Healthy People* programs contribute to the overall wellbeing of the community. Visitors come to learn about the area's wealth of cultural values, especially learning about Aboriginal life and cultural practices from Traditional Owners.

8.1 Information, interpretation and education

Education and interpretation are powerful and effective tools for connecting people with parks. By promoting an appreciation and understanding of nature and culture, these communication tools contribute to a positive visitor experience. Both are also critical park management tools that help visitors understand the values of parks and the benefits of management actions and conservation messages more broadly.

Education and interpretation also inform visitors about appropriate behaviour (particularly in relation to litter, vehicle use and campfires) in order to protect park values and ensure that all visitors have the chance to enjoy their time in the parks.

Parks Victoria aims to ensure that authentic and enjoyable learning experiences are available to a wide range of park visitors and local community members.

Visitor centres, park offices, and local townships provide visitors with information about the parks through park visitor guides and brochures, such as touring and activity guides. Visitor information and maps are also included on information boards at popular visitor sites. A few other sites along the Murray also have interpretative signage, including Barmah NP and Quinns Island, Cobram RP.

Parks Victoria also maintains up-to-date online information (www.parkweb.vic.gov.au) and a free-call telephone information service (13 1963) to help visitors plan their trip. Signs on access roads help to orientate visitors.

Park rangers are an important face of the organisation and irreplaceable in delivering some aspects of education and interpretation authentically, through informal interactions as part of their duties or through structured programs such as the Junior Ranger program or formal tours. Innovative digital technologies such as mobile apps, podcasts and videos that support self-guided exploration and discovery of parks will be introduced progressively to augment the visitor experience.

Parks Victoria recognises that building the capacity of people to interpret parks is critical to effective education and interpretation. Partnerships with Traditional Owners, peak bodies, recreation groups, tour operators, schools, outdoor education providers, friends groups, community groups and volunteers is an important part of delivering education and interpretation programs and services.

Schools visit the parks for field trips, outdoor education, camping, and adventure activities. Outdoor education offers opportunities for students to develop positive relationships with the environment while building self-confidence, resilience and teamwork skills and respect for the environment.

School visits can contribute to students’ lifelong health through an early connection with nature. Parks Victoria offers online material to support schools visits, and rangers can provide additional detail about safe and environmentally sensitive behaviour and local park management programs.

Goals	
Visitors understand park values and management, and connect with the parks during their visit. Visitors and students develop a deeper understanding and greater appreciation of the River Red Gum environment, culture and history, and connect healthy parks with community health and personal wellbeing.	
Strategies	Park
Progressively upgrade and deliver interpretation of park stories at priority visitor experience areas, and along key touring routes and trails; and, seek partnerships with Traditional Owners, CMAs, councils, licensed tour operators and volunteer groups .	All
Empower and support volunteers, licensed tour operators, recreation bodies, the media, community groups and tertiary institutes to deliver interpretation programs to support management programs and visitor experiences.	All
Progressively develop web and mobile applications to support self-guided learning and discovery in priority visitor experience areas.	All
Adopt consistent themes (sections 1.4 and 4.2), design and messages for all interpretive material on park values and management programs, including key issues such as minimising what you take in; glass-free camping; use of chemical toilets; reducing fires unless necessary for cooking; respect; and compliance.	All
Continue to offer face-to-face information programs, Junior Ranger and other community-based interpretation programs in priority VEAs at peak visitor times, as well as normal opportunistic ranger contact with visitors.	All
Provide suitable information and interpretive experiences for non-English speaking visitors in locations of greatest need.	Shepparton Regional Park, Cobram Regional Park, explore others
Encourage use of the parks by schools, particularly as outdoor learning environments. Increase engagement with schools to improve experiences and increase involvement. Enable use of suitable areas by bush kinders.	All
Provide information to assist disabled groups, or others who face barriers to accessing parks, to enable accessible choices for all.	All



Information board, Gunbower Forest

Goals	Park
<p>Accurate and relevant information assists visitors with planning their visit, on arrival and during their visit.</p> <p>Visitors are welcomed and informed of the range of opportunities and enjoyable experiences available.</p>	
Strategies	Park
Work with local councils and regional tourism visitor centres regarding requirements for, and distribution of, park visit information, including assisting visitor access to information online and from key contacts.	All
Maintain visitor information online, including user-friendly interactive maps, readily accessible at an appropriate and detailed scale.	All
Review information provided at gateway towns and orientation signage to the parks and upgrade where required.	All
Provide pre-visit and on-site park visitor information, including information on access and tree risks.	All
Continue to provide visitor orientation and safety messages, multilingual where required, and information boards at car parks, boat ramps, and boat moorings at priority visitor experience areas. Investigate the possible trial and introduction of QR Codes for information support linked to regulations, facilities, way-finding activities, translation services and other experiences through digital technology on mobile devices.	All
Investigate emerging digital technology, such as virtual reality and 360 degree photos and videos, as an information tool for pre-visit information in priority visitor experience areas.	All
Encourage the cooperation and collaboration between Traditional Owners, other agencies, community and other groups to conserve and protect the parks.	All



Goulburn River at Shepparton

RiverConnect

RiverConnect aims to nurture the Shepparton and Mooroopna communities' respect for, and use and love of, the Goulburn River and wetlands by improving access to the river and increasing awareness and participation in care of the river environment and its heritage.

The first *RiverConnect Strategic Plan* (2011) put in place actions that provided a range of benefits: an educational program, land managers working together to improve the river environment, activities that engaged the community with the river, and opportunities for the Aboriginal community to share their relationship with the waterways. In 2017 the plan was updated and builds on these benefits. Under the new plan:

- Access will be improved by doubling the network of shared paths from 50 km to 100 km, improving disabled access and improving signage.
- Awareness of the river environment will be increased through school programs and participation in community events.
- The community will be encouraged to explore the river environment through self-guided tours, incorporating opportunities into events and promoting activities that show people the river environment and its cultural heritage.
- The community will be encouraged to participate in revegetation projects, pest plant and animal programs and litter control.
- The RiverConnect program operates under the auspices of the City of Greater Shepparton and is supported by a number of agencies and community groups: Goulburn Broken CMA, Goulburn Murray Landcare Network, Goulburn Valley Environment Group, Parks Victoria, Word and Mouth, Ethnic Council, Yorta Yorta Nation Aboriginal Corporation and Goulburn Valley Water.



Sharing Traditional Owner knowledge

8.2 Working with Traditional Owners and the community

There are significant opportunities to recognise and integrate Traditional Owners' cultural and traditional knowledge into park management. Parks Victoria recognises the mutual benefits of working with Traditional Owners and incorporating their knowledge and advice into park management. Traditional Owners and Parks Victoria have established, and continue to strengthen, their working relationships; they share knowledge and develop approaches to build capacity and resources.

Parks Victoria is also committed to working with communities to improve the health of parks as well as the health of communities. The *Healthy Parks Healthy People* approach is based on research that shows that there are many health and wellbeing benefits to spending more time in a natural environment. Parks Victoria welcomes and encourages people of all abilities, cultures and ages to work with Parks Victoria through sharing knowledge, volunteering and partnerships. Opportunities for communities and groups, such as people from culturally and linguistically diverse (CALD) backgrounds, people with disabilities, older people and young people, to become involved in parks are encouraged. With diverse people come diverse ideas for solving some of the more difficult aspects of park management.

Many people have strong connections to places in the parks that contribute to a personal, family or community sense of identity, often through their involvement in recreational activities. These people can hold a deep knowledge of the parks, built up over generations. Their diverse backgrounds and experience bring unique perspectives and knowledge about the parks. Many have land management skills and detailed knowledge of an area's geography, climate, ecology and history, and how the parks are used. Understanding and sharing this knowledge can provide a valuable asset for park management. There are benefits for all in recognising and respecting the significant social associations and enduring cultural connections that the whole community has with the parks. There are increasing opportunities for people to strengthen their connections, share knowledge, participate in operational park management and become active park stewards.

Parks Victoria works cooperatively with other agencies, adjacent landholders and a range of community and recreation groups to implement the plan and improve environmental, cultural and recreation activity management in the parks. Many groups and individuals have an active interest in park management and provide practical help, including friends groups, volunteer campground hosts, schools, volunteer track rangers, recreation groups, field naturalists clubs and conservation organisations. There are further opportunities to extend and diversify volunteering to increase community connections and promote health and wellbeing.

Parks Victoria collaborates with local government and neighbouring landholders to coordinate programs, such as pest control, and find realistic solutions on shared issues, such as litter management.

Goal	
Community skills and knowledge are incorporated into park planning and management and collaboration with and between agencies, councils and volunteers is strengthened.	
Strategies	Park
Provide opportunities for the Traditional Owners and people and groups with strong connections and deep knowledge of the River Red Gum Parks to share knowledge and develop collaborative working relationships to improve park and operational decision-making.	All
Promote Traditional Owner and community volunteer involvement in all aspects of park management, and create an enabling environment to develop strong relationships with diverse volunteers.	All
Engage with New South Wales and South Australian government agencies and indigenous stakeholder groups to align community messages and responses, and exchange knowledge of successful practices.	All
Engage with CMAs and councils to support and expand their programs, and promote involvement in community events that provide economic benefit to local communities. Encourage use of the parks as venues for council community health and other programs, for example, heart programs.	All
Publicise and support information exchange meetings with nearby landholders.	All
Establish community engagement days, community forums and cross-cultural training days, and link with volunteer events such as Clean Up Australia Day.	All
Encourage and support groups that use or have an interest in the park to work together to pursue sources of funding, for projects in the park, as appropriate.	All
Work with user groups to encourage and promote safe practices, training and awareness of relevant codes of practice.	All

Goal	
Traditional Owner aspirations, values and knowledge are reflected in park management, ensuring that cultural practices continue, connections to healthy Country are strengthened and community appreciation of Traditional Owners' rich and diverse cultural heritage is enhanced.	
Strategies	Park
Work with Traditional Owners to improve park management capacity and skills.	All
Continue to strengthen the joint management planning established through the Traditional Owner Settlement Act, and share learning about land and waterway management.	All
Identify ways to support traditional activities on Country in the parks and increase engagement with visitors, the broader community, Parks Victoria and licensed tourism operators.	All
Increase numbers and presence of Aboriginal staff, and identify capacity-building opportunities where Aboriginal people are able to work on Country.	All
Incorporate the use of Aboriginal language and placenames and support renaming of sites and features to Aboriginal names. Develop program for naming unnamed tracks with the Traditional Owners and community.	All
Collaborate with Traditional Owners on management of VEAs, including travel routes, journeys and storytelling.	All
Use Traditional Owners' knowledge, advice and increased involvement to improve information, interpretation and understanding of Aboriginal cultural values.	All

Goals	
Visitors and communities connect with the parks in ways that contribute to their protection and conservation.	
Strategies	Park
Promote hands-on learning through volunteering programs and citizen science activities.	All
Improve understanding of interest group aspirations and work in partnership to link with monitoring and other management programs and share knowledge.	All
Support established and new friends and other groups with skills and capacity-building to assist with park management activities and enhance membership and succession through promotion of opportunities.	All
Develop long-term, innovative local volunteer programs based on community interests and park management needs that offer positive and diverse opportunities for involvement.	All
Engage recreation bodies in promoting minimal impact codes and improving recreation activity management such as 'Adopt a track' by volunteer bushwalkers.	All
Continue to support the RiverConnect program.	Shepparton RP



Monitoring bats with an acoustic recording station

9 Improving our Knowledge

Our understanding of the parks and reserves is growing as scientific and traditional knowledge is gathered and used to improve park management.

Research is critical for filling gaps in knowledge about many aspects of the River Red Gum Parks. Continual monitoring is an essential part of Parks Victoria's adaptive management systems. Modern land management is based on the best available science, and insights gained from monitoring programs are used to evaluate, adapt and improve management. Innovation in exploring ways to enhance management effectiveness needs to be encouraged.

Research and monitoring of program effectiveness are essential components of park management, providing objective evidence to support decision-making and informing how and when intervention is required. Research can be fundamental (to improve basic knowledge), applied (targeted to specific objectives) or opportunistic (taking advantage of convenient or unusual conditions). Research for park management includes botany, zoology, ecology, cultural heritage, recreation and social sciences.

DELWP maintains state-wide inventory databases for flora, fauna and vegetation, and species records are also available through the Atlas of Living Australia, but there is also a need for systematic, long-term monitoring of biodiversity in Victoria (Bennett et al. 2007). Parks Victoria has a collaborative research program with leading universities and research institutions through its Research Partners Program. Research partners, DELWP and catchment management authorities also undertake research and monitoring on issues such as water quality, threatened species and fire effects. Other research institutions and individual researchers, especially postgraduate students, conduct research from time to time in parks and reserves. The role of ecological thinning is under investigation, and its future use as a management tool will be informed by the results.

Although climate modelling by CSIRO has provided a clear idea of the likely changes in the climate of the Murray Basin (CSIRO & BOM 2015), we know little about the consequences of this change on critical ecological factors, such as water availability for flooding regimes, fire behaviour, and the impacts on threatened species. Further targeted research is therefore needed to support park planning and management for climate change.

Parks Victoria adopts an adaptive management approach to park management. This requires that outcomes of programs can be readily monitored and evaluated to gauge success. Based on the evaluation, management is adjusted to improve outcomes.

An essential part of ecological management is gathering data on the health or condition of particular conservation assets. The ecological condition of the Riverine Forests and Box–Ironbark Forests sub-ecosystems is reasonably well understood, but assessments are not comprehensive for other sub-ecosystems such as Saline Wetlands, Freshwater Wetlands and Mixed Dry Forest. There are large gaps in knowledge to be filled that will assist in adaptively managing the parks and reserves. Quantitative citizen science and research can assist.

This enables improved decisions to be based on the best available science, supported by local and social knowledge. Monitoring programs will be essential to inform management responses to climate change (section 6.1).

The Conservation Action Plan for the River Red Gum Parks (Parks Victoria 2017a) proposes some research and monitoring priorities relating to ecosystems and threatened species, including:

- environmental flow requirements, macroinvertebrates (needed for condition assessment), current condition and trends in condition of the smaller saline and freshwater wetlands
- the diversity and abundance of aquatic plants and the ecology of soil seed banks and the dispersal of propagules within and between systems
- the diversity, abundance and distribution of non-vascular plants, fungi and invertebrates
- mapping for much of the Riverine Forest and Woodland Sub-ecosystem in the State-wide Forest Resource Inventory
- Saline Wetlands Sub-ecosystem in the Index of Wetland Condition.

Goals	
Management decisions and techniques are improved through enhanced ecological, cultural and visitor use knowledge, and the effectiveness of management programs is monitored and evaluated.	
Strategies	Park
Promote ecological research that addresses key information gaps, increases understanding and improves adaptive management and monitoring of priority ecological assets and threats (see table 9.1).	All
Develop and implement monitoring and evaluation plans incorporating priority ecological assets and threats.	National parks
Work with research partners in developing regional science and knowledge partnerships and apply the findings to improve park management.	All
Establish or maintain partnerships with research institutions, and where appropriate, actively seek working with individual researchers.	All
Support research partners and organisations to undertake research and monitoring activities that will assist park management.	All
Support and encourage quantitative citizen science research and monitoring activities targeted to fill key knowledge gaps and complement park management.	All
Work with Traditional Owners to research and document Aboriginal cultural values, including places, stories, travel routes and food collection practices.	All
Work with Traditional Owners to understand and include Traditional Owner ecological and other knowledge in park management.	All

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Strategies	Park
<p>Continue to partner with DELWP and research partners to:</p> <ul style="list-style-type: none"> • better understand appropriate fire regimes and the impacts of bushfire and planned burning • monitor bushfire risk and ecosystem resilience, protection and response of ecosystems and species • monitor and assess planned burns and mechanical treatments against burn objectives • evaluate and report on fire management. <p>Where needed, develop guidelines and operational protocols for critical park assets, such as Grass-trees, large ancient Red Gums, and areas with fire-sensitive threatened species and ecosystems and cultural sites.</p>	<p>All</p> <p>Warby-Ovens NP and All</p>
<p>Work with DELWP, CMAs and other agencies to support invasive species research, and monitoring and evaluation, in particular of the effectiveness of programs and techniques</p>	<p>All</p>
<p>Work with CMAs, DELWP and other agencies to support research, monitoring and evaluation of the effects of environmental watering.</p>	<p>Selected wetlands, riverine parks and reserves</p>
<p>Support monitoring of the effects of flood events and drought on identified park values.</p>	<p>All</p>
<p>Adopt a coordinated approach to research and monitoring activities, through collaboration with DELWP, North Central and Mallee CMAs, and other agencies, to assess and report ecological character of Ramsar sites using shared data.</p>	<p>Ramsar wetlands</p>
<p>Foster a collaborative approach to research and monitoring activities at sites receiving environmental water by working with DELWP, CMAs and other agencies to improve reporting on key indicators and outcome-based monitoring.</p>	<p>All sites that receive environmental water</p>
<p>Prepare a monitoring and evaluation plan to report against the achievement of objectives set by this plan, building on monitoring activities by other agencies and identifying gaps that need to be filled.</p>	<p>All</p>
<p>Improve our understanding of communities' connections to the planning area and the aspects that they value.</p>	<p>All</p>
<p>Increase knowledge and understanding of the location and significance of historic sites and structures, and maintenance and protection methods.</p> <p>Monitor and evaluate changes in key cultural values and assets, in particular for any impacts from visitors or management activities.</p>	<p>All</p> <p>All</p>
<p>Undertake targeted research to increase knowledge and understanding of visitor use trends, patterns, and satisfaction.</p> <p>Monitor and evaluate changes in key natural values and assets for impacts from visitors. Increase our knowledge of protection methods.</p>	<p>All</p> <p>All</p>

Table 9.1: Key research questions.

PRIORITY THEME Key research questions	Natural ecosystem			
	Waterways and Wetland:	Riverine Forest and Woodland	Plains Woodland	Box–Ironbark and Mixed Dry Forest
FIRE				
How can Traditional Owners’ burning practices in the different vegetation communities be integrated into fire management?	✓	✓	✓	✓
What is the fire history of each park and reserve since European settlement?	✓	✓	✓	✓
What are the long-term ecological outcomes of the current bushfire management practices?	✓	✓	✓	✓
What are the impacts of fire on vegetation structure and key flora and fauna species?	✓	✓	✓	✓
WATER AND FLOOD				
What watering regimes are required to maintain the viability of different floodplain vegetation communities?	✓	✓		
What are the effects of river regulation and artificially altered water regimes on aquatic, riparian and floodplain ecosystems?	✓	✓		
INVASIVE SPECIES				
What are the existing and predicted extent, abundance and ecological impacts of large introduced herbivores on the area’s ecology?	✓	✓	✓	✓
What are the existing and predicted extent, abundance and ecological impacts of introduced predators on the area’s native fauna?	✓	✓	✓	✓
What are the existing and predicted extent, abundance and ecological impacts of high risk terrestrial and aquatic environmental weeds?	✓	✓	✓	✓
What control methods for invasive plants and animals are likely to be most effective and feasible for achieving the intended management objectives for each species?	✓	✓	✓	✓
What are the effects of introduced fish species on riparian and aquatic ecosystems and their biota, and how can these effects be mitigated?	✓			
CLIMATE CHANGE				
What biota and ecosystems in the planning area are most at risk from climate change?	✓	✓	✓	✓
How can climate change risks be mitigated?	✓	✓	✓	✓

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Table 9.1 (continued)

PRIORITY THEME Key research questions	Natural ecosystem			
	Waterways and Wetlands	Riverine Forest and Woodland	Plains Woodland	Box–Ironbark and Mixed Dry Forest
Which areas and ecosystems in River Red Gum Parks are most important for habitat connectivity and as climate refugia?	✓	✓	✓	✓
FLORA, FAUNA AND ECOLOGICAL PROCESSES				
What gaps exist in our knowledge of the terrestrial and aquatic flora and fauna of the River Red Gum Parks and what are the best ways to fill these gaps?	✓	✓	✓	✓
What are the habitat requirements and condition, distribution and abundance of key faunal groups, such as waterbirds, native fish and other species of conservation significance?	✓	✓	✓	✓
Which ecosystem elements need restoration, and which techniques are feasible?	✓	✓	✓	✓
VISITORS				
How do visitors use the River Red Gum Parks, and how are they likely to use them in the future?	✓	✓	✓	✓
What are the impacts of visitors and recreation on natural and cultural values and the ecological integrity of the planning area?	✓	✓	✓	✓
What options are available for mitigating visitor impacts?	✓	✓	✓	✓
ABORIGINAL HERITAGE				
What are the key cultural signs and stories of healthy River Red Gum Country?	✓	✓	✓	✓
How can we improve our understanding of Aboriginal places, sites and objects, and how they are best protected?	✓	✓	✓	✓
HISTORIC HERITAGE				
What opportunities exist for research into social history, technological change, past land uses and impacts, and the significance of particular heritage places?	✓	✓	✓	✓
What historic sites exist in the planning area, what is their significance and how best can they be protected?		✓	✓	✓
GEOLOGY AND GEOMORPHOLOGY				
What sites of geological and geomorphological significance exist in the planning area?	✓	✓	✓	✓
What processes are threatening sites of geological significance, and how can they be mitigated?	✓	✓	✓	✓



Silver Needlewood (*Hakea leucoptera*),
Heywood Lake Wildlife Reserve

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Sunset and Venus,
Murray–Sunset National Park

Appendix 1: Parks, reserves and natural ecosystems within the planning area

PARK or RESERVE	AREA (ha)	IUCN category	INLAND WATERS AND WETLANDS					DRY FORESTS AND WOODLANDS				GRASSLANDS	MALLEE
			Riverine Forest and Woodland	Ephemeral Freshwater Wetland	Permanent Freshwater Wetland	Saline Wetland	Box–Ironbark Forest	Mixed Dry Forest	Plains Woodlands	Semi-arid Woodlands			
NATIONAL, STATE and OTHER PARKS managed under the National Parks Act 1975													
Gadsen Bend Park	1623	II											
Gunbower National Park	9330	II											
Hattah–Kulkyne National Park	50060	II											
Kings Billabong Park	2199	Ia											
Leaghur State Park	2050	II											
Lower Goulburn National Park	9321	II											
Murray–Kulkyne Park	4545	III											
Murray–Sunset National Park	57633	II											
Nyah–Vinifera Park	1368	II											
Warby–Ovens National Park	14713	II											
REGIONAL PARKS managed under the Crown Land (Reserves) Act of Forests Act													
Kerang Regional Park	364												
Murray River Park (proposed) [#]	37000												
Shepparton Regional Park	2798												
NATURE CONSERVATION RESERVES managed under the Crown Land (Reserves) Act													
Bannerton FFR	200	III											
Bonegilla NCR	12	IV											
Gannawarra Red Gum Swamp NCR	148	Ia											
Karadoc NCR	111	Ia											
Lambert Island NCR	1298	Ia											
Moodemere NCR	73	Ia											
Passage Camp NCR	21	Ia											
Pyramid Creek NCR	50	Ia											
Rowland NCR	146	Ia											
Toltol FFR	262	Ia											
Wandella NCR	981	Ia											
Welton NCR	162	Ia											
Winlaton NCR	86	Ia											
Wyuna NCR	18	Ia											

PARK or RESERVE	AREA (ha)	IUCN category	INLAND WATERS AND WETLANDS				DRY FORESTS AND WOODLANDS				GRASSLANDS	MALLEE
			Riverine Forest and Woodland	Ephemeral Freshwater Wetland	Permanent Freshwater Wetland	Saline Wetland	Box-Ironbark Forest	Mixed Dry Forest	Plains Woodlands	Semi-arid Woodlands		
Yassom Swamp NCR	369	Ia										
NATURE CONSERVATION RESERVES managed under the Wildlife Act												
Dartagook WR	713	Ia										
Gemmill Swamp WR	216	Ia										
Lakes Powell and Carpul WR	725	Ia										
Pelican Lake WR	38	Ia										
NATURAL FEATURES RESERVES managed under the Crown Land (Reserves) Act												
Arcadia SSR	1060	III										
Beauchamp BR	5	IV										
Beauchamp Salt Lake BR	19	IV										
Bonegilla Wetland BR	0.4	IV										
Boosey H42 BR	18	IV										
Bumbang I261 BR	21	IV										
Bumbang I262 BR	563	IV										
Bumbang I264 BR	11	IV										
Bumbang I38 BR	13	IV										
Bumbang I39 BR	65	IV										
Capels Crossing SSR	324	III										
Carlyle H115 BR	5	IV										
Carwarp BR 2	6	IV										
Cohuna BR	2	IV										
Cranes Lake BR	34	IV										
Darling Junction EA**	4											
Korrak BR	57	IV										
Lake Boga LR	77											
Lake Kelly BR	3	IV										
Leaghur BR	14	VI										
Leitchville BR	9	IV										
McMillans Lake BR	32	IV										
Mildura I15 BR	86	IV										
Moira BR	8	IV										
Murrabit BR	17	IV										
Murray River K15 SSR	4	III										
Murray River K16 SSR	17	III										

PARK or RESERVE	AREA (ha)	IUCN category	INLAND WATERS AND WETLANDS				DRY FORESTS AND WOODLANDS				GRASSLANDS	MALLEE
			Riverine Forest and Woodland	Ephemeral Freshwater Wetland	Permanent Freshwater Wetland	Saline Wetland	Box–Ironbark Forest	Mixed Dry Forest	Plains Woodlands	Semi-arid Woodlands		
Myall BR 2	32	IV										
Mystic Park BR	646	IV										
Nyah BR	162	IV										
Peechelba H104 BR	13	IV										
Peechelba H105 BR	2	IV										
Piangil BR	0.2	IV										
Salter BR	4	IV										
Sandhill Lake BR	165	IV										
Spence Bridge EA**	387											
Spences Lake BR	41	IV										
St Germain's BR	0.4	IV										
Strathmerton BR	35	IV										
Toltol I263 BR	235	IV										
Toltol I40 BR	21	IV										
Tresco West BR	91	IV										
Undera BR	1	IV										
Wakiti Creek SSR	313	IV										
Wargan–Mallee BR	1449	III										
Wee Rup BR	7	IV										
Wharparilla BR	10	IV										
Wodonga BR	5	IV										
Woorinen South BR	10	IV										
STATE GAME RESERVES managed under the Wildlife Act												
Baillieu Lagoon WR (Richardsons Lagoon)	248	VI										
Benjeroop WR	373	VI										
Big Reedy Lagoon WR	274	VI										
Cullens Lake WR *	733	VI										
Duck Lake WR*	413	Ia										
Great Spectacle, Little Spectacle, Round Lake, Tobacco Lake, Little Lake Meran WR*	143	VI										
Harts Swamp WR*	42	VI										
Heywood Lake WR*	564	IV										
Hird Swamp WR	465	VI										

PARK or RESERVE	AREA (ha)	IUCN category	INLAND WATERS AND WETLANDS				DRY FORESTS AND WOODLANDS				GRASSLANDS	MALLEE
			Riverine Forest and Woodland	Ephemeral Freshwater Wetland	Permanent Freshwater Wetland	Saline Wetland	Box-Ironbark Forest	Mixed Dry Forest	Plains Woodlands	Semi-arid Woodlands		
Johnson Swamp WR	721	VI										
Kanyapella WR ²	486	VI										
Kerang WR*	810	VI										
Koorangie WR ²	3246	VI										
Lake Elizabeth WR	121	VI										
Lake Leaghur WR*	83	VI										
Lake Mannaor WR*	84	VI										
Lake Murphy WR*	222	VI										
Little Lake Charm WR*	61											
Loch Garry WR*	557	VI										
Lower Ovens WR	1305											
McDonald Swamp WR	215	VI										
Plumptions WR*	151	VI										
Stevenson Swamp WR	93	VI										
Tutchewop WR*	509	VI										
Westblades Swamp WR	70	VI										
HISTORIC AREAS and HISTORIC RESERVES managed under the Crown Land (Reserves) Act												
Berribee Homestead HR	0.8											
Bumbang Island HA	641											
Koondrook HR	6											
Major Mitchell Lagoon HA												
OTHER LAND managed under the Crown Land (Reserves) Act												
Ecologically Managed Minor Area	25											
Lake Moodomere LR												

Key to zoning

Black – see maps

Green – Conservation Zone

Brown – Conservation and Recreation Zone

Blue – Education Zone

the land that constitutes the proposed park includes River Murray Reserve, adjoining areas of state forest, existing regional parks at Wodonga, Yarrawonga, Cobram, Tocumwal and Echuca, Lake Moodemere LR, Red Cliffs SR, Murray River K16 SSR, Major Mitchell Lagoon HA, Wargan-Mallee BR, Passage Camp FR (NCR), area of Darling Junction Education Area, public land water frontages, and other small areas of public land.

Key to hunting

Hunting not permitted except:

(a) game hunting permitted during the open season. Pest animal hunting permitted

(b) game hunting permitted during the open season. Pest animal hunting not permitted.

* regulations pending. ** hunting not permitted

Key to IUCN categories

Ia: Strict Nature Reserve: Protected areas that are strictly set aside to protect biodiversity and also possibly geological/geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring.

Ib: Wilderness Area: Protected areas that are usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.

II: National Park: Large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.

III: Natural Monument or Feature: Protected areas set aside to protect a specific natural monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value.

IV: Habitat/Species Management Area: Protected areas aiming to protect particular species or habitats and management reflects this priority. Many category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.

V: Protected Landscape/Seascape: A protected area where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.

VI: Protected area with sustainable use of natural resources: Protected areas that conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area.

Source: IUCN (2016).

Key to reserve names

BR Bushland Reserve

EA Education Area

FFR Flora and Fauna Reserve

HA Historic Area

HR Historic Reserve

LR Lake Reserve

NCR Nature Conservation Reserve

SGR State Game Reserve

SR Scenic Reserve

SSR Streamside Reserve

WR Wildlife Reserve

Appendix 2: Summary of priorities for addressing threats

PARKS AND RESERVES	MANAGE GRAZING PRESURE									MANAGE PREDATION		MANAGE AQUATIC PESTS AND WEEDS			PREVENT EMERGING AND NEW WEEDS					MANAGE EXISTING WEEDS		
	Rabbits	Kangaroos	Goats	Pigs	Sambar Deer	Fallow Deer	Red Deer	Feral Cattle	Wandering stock	Foxes	Cats	Carp	Cabomba	Arrowhead	Chilean Needle-grass	Gazzania	Thorn Apple	Willows	Buffel Grass	Woody weeds	Biological control	Phytophthora
National, State and Other Parks																						
Gunbower National Park	A		E	E	A, E	A	A, E		P	A	A	A				E		A	P	A	C	P
Hattah–Kulkyne National Park	A	A	A	A1					P	A1	A1	A1				E	C	P	P	A	C	
Lower Goulburn National Park	A		E	E	A	A	A, E	E	P			A	P	C	C			A	P	A	C	P
Murray–Sunset National Park	A	A	A	A1				P	P	A1	A1	A1					C	A	P	A	C	
Warby–Ovens National Park			E	E	P, E	P	P		P	A	A	A	P	C	C		E	A	P	A	C	C
Leaghur State Park	A1								P			A							P	A	C	P
Gadsen Bend Park	A1		E	E					P	A1	A1	A1							P	A	C	
Kings Billabong Park	A		P	A1					P	A1		A1						E	P	A	C	
Murray–Kulkyne Park	A		A						P	A1		A1				P			P	A	C	
Nyah-Vinifera Park	A			A					P			A							P	A	C	P
Regional Parks																						
Shepparton Regional Park	A1								P			A			C			A	P	A	C	P
Kerang Regional Park	A								P			A			C				P	A	C	P
proposed Murray River Park																						
All incl. River Murray Reserve	A1		E	E					P	A	A	A		A	C	E	E	A	P	A	C	P
Echuca Regional Park															P							

Appendix 3: Summary of community submissions

Ninety-seven written submissions were received on the draft plan. Fifty-one were from organisations and 46 came from individuals. Copies of submissions are available for public inspection. Four submissions were marked as confidential and are not listed here and are not available for inspection.

INDIVIDUALS – Name and submission number	
Adams, Peter	44
Adams, Peter	83
Allen, Geoffrey G	38
Bakker, Carol	13
Barber, Paul	61
Barton, Ray	97
Busk, Joshua	40
Casey, Martin	37
Cawley, Bruce	16
Clout, Julie	15
Collins, Jodie	91
Cooke, Geoff & Judy	81
Corby, Allan	29
Davidson, Ian	27
Drewitt, Roger	69
Gladstone, Wade	80
Goyne, Brett	17
Greenham, Keith	33
Hanrahan, Noela	12
Hedditch, Geoff	30
Hicks, Austin	10
Hoornweg, Henry & Gayle	75
Isenegger, Daniel	6
Johnson, Anthony	95
Kane, Mark	72
Lebner, Tim	28
Molik, Peter	21
Nice, Graham	71
Nicol, Bill	34
Noble, Philippa	48
Owen, Tess	4
Pace, Joe	8
Sass, Deb	5
Schifferle, Rodger	36
Sefton, Jason	62
Stanmore, Glenn & Heather	64
Stephens, Bill	9
Threlfall, Steven	19
Walsh, Amanda	65
Weber, Rolf	11
Williams, Tricia	57
Worboys, Sylvia	25
Anon	2
ORGANISATIONS – Name and submission number	
Arbuthnot Sawmill	74
Australian Brumby Alliance	42
Birdlife Mildura	47
Black Dog Creek Big Game Fishing Club	23
Campaspe Shire	76
CFA (District 22)	49
CFA (District 22)	79
CFA (District 24)	86
Department of Primary Industries (NSW)	94
Field and Game Australia	88
First People of the Millewa-Mallee Corp	96
Four Wheel Drive Victoria	54
Friends of Merbein Common	56
Friends of Nyah–Vinifera / Friends of the Earth	22
Gannawarra Shire	52
Goulburn Broken CMA	43
Goulburn Murray Water	82
Goulburn Valley Association of Angling Clubs	93
Goulburn Valley Association of Angling Clubs	67
Greater Shepparton City Council	58
Institute of Foresters (Vic)	26
JSMS Pty Ltd	50
Koondrook Development Committee	59

Lifesaving Victoria	32	Shepparton CPM Group.....	1
Maritime Safety Victoria	39	Shire of Campaspe.....	14
Merbein Concerned Residents	73	South West Anglers Association	87
Merbein District Historical Society.....	46	Sporting Shooters Association Aus. (Victoria)	55
Merbein Progressive Group Inc.	68	Sporting Shooters Association Aus. (Nth Vic.)	3
Moira Shire.....	24	Tatura Community Groups	41
Moira Shire.....	51	Underra Angling Club	70
Moira Shire Tourism Advisory Board	85	Underra Angling Club.....	63
Murray Regional Tourism.....	77	VicForests	84
Murray River Action Group	90	Victorian Association of Forest Industries	60
Neds Corner Turst for Nature	66	VNPA.....	89
North Central CMA.....	78	VRFish	92
RiverConnect, Shepparton City Council	53		
Roads and Maritime Services, NSW Govt.....	7		
Rotary Club of Merbein.....	45		

An on-line survey invited public comment on a number of aspects of the draft plan and received 76 responses.

Andrew Smith	Gerard Keogh	Peter Helms
Angela Armstrong	Graeme Toll	Peter Smith
Anthony Newham	Hamish Paterson	Rhett McDonald
Barry McAdam	Ian Armer	Richard Grinter
Brendan Murray	James Ross	Rocco Di Vitto
Brendon Wahlert	Jason Sefton	Roderick Anderson
Brett Knight	Jenny Lawrence	Ross Threlfall
Bruce Douglas	Julie Douglas	Sally Rice
Charlie Tagliaferro	Kadeja Assaad	Scott Murison
Chris Beale	Leigh Wilson	Sharon Golde
Chris Scicluna	Lewis Kennedy	Simon Beeching
Chris Toulson	Liam Casey	Tim Morgan
Clayton Easden	Liz Diamond	Tristen Murray
Craig Dore	Malcolm Laurence	Victoria Coghill
Damian Morgan-Bulled	Michele Bottrell	Virginia Brook
Dan Wannan	Mike Erny	Wendy Havard
Daniel Lovell	Monica Morgan	
Darryl Remnant	Neville Lavis	15 other responses were received where no name or an incomplete name was provided.
David Morrissey	Nicholas Dorè	
Dean Adams	Noel Mitchell	
Gary Palise	Paul Barber	
Gayle McConnell	Paul Oman	
	Peta Thornton	

Appendix 4: Summary of Visitor Experience Areas (VEAs)

VEA	Park	Management Zone Maps
Lindsay Island VEA	Murray–Sunset National Park	2
Mulcra Island – Lock 9 VEA	Murray–Sunset National Park	2
Wallpolla Island VEA	Murray–Sunset National Park	2
Merbein Common VEA	proposed Murray River Park	3
Kings Billabong VEA	Kings Billabong Park, Woorlong Wetlands and Psyche Bend Lagoon	3
Karadoc - Colignan VEA	proposed Murray River Park	3
Kulkyne–Liparoo VEA	Murray–Kulkyne Park and Hattah–Kulkyne National Park.	4
Hattah Lakes VEA	Hattah–Kulkyne National Park	4
Wemen–Coreena Bend VEA	proposed Murray River Park including River Murray Reserve.	5
Gadsen Bend Park VEA	proposed Murray River Park including River Murray Reserve.	5
Robinvale VEA	Robinvale township	5
Belsar Island VEA	proposed Murray River Park Lakes Powell and Carpul Wildlife Reserve	5
Murrumbidgee Junction VEA	proposed Murray River Park and Heywood Lake Wildlife Reserve.	5
Burra–Piambie VEA	proposed Murray River Park, River Murray Reserve and the Major Mitchell Lagoon Historic Area	5
Nyah–Vinifera VEA	Nyah–Vinifera Park	6
Swan Hill–Pental Island VEA	proposed Murray River Park, including areas of River Murray Reserve.	6
Kerang Lakes VEA	Swamps and lagoons in a range of reserves near Kerang.	7
Leaghur VEA	Leaghur State Park and Lake Leaghur Wildlife Reserve	7
Koondrook VEA	proposed Murray River Park from Thompsons Track to Benwell, north-west of Gunbower National Park	7
Gunbower VEA	Gunbower National Park and proposed Murray River Park	7
Echuca–Torrumbarry VEA	Murray River and adjacent natural parklands north-west of Echuca, and part of the proposed Murray River Park including areas of River Murray Reserve, and Baillieu Lagoon Wetland Reserve.	8
Echuca Township VEA	proposed Murray River Park, including areas of the River Murray Reserve around Echuca.	8
Kanyapella VEA	East of Echuca and proposed Murray River Park including areas of River Murray Reserve	8
Simpson–Wyuna VEA	Wyuna Nature Conservation Reserve (NCR) and the northern part of Lower Goulburn National Park.	9
Undera VEA	Lower Goulburn National Park.	9
Myers–Loch Garry VEA	Lower Goulburn National Park and Loch Garry Wildlife Reserve	9
Goulburn River–Shepparton VEA	Lower Goulburn National Park and Shepparton Regional Park.	9

VEA	Park	Management Zone Maps
Arcadia–Murchison VEA,	Shepparton Regional Park and Arcadia Streamside Reserve.	9
Barmah Township VEA	proposed Murray River Park including areas of River Murray Reserve north and south of Barmah township	10
Ulupna Island – Strathmerton VEA	Tocumwal Regional Park, the proposed Murray River Park and large areas of the Marmah National Park.	11
Tocumwal VEA	proposed Murray River Park including areas of River Murray Reserve	11
Cobram VEA	proposed Murray River Park including areas of River Murray Reserve adjacent to Cobram township	11
Cobrawonga VEA	proposed Murray River Park including areas of River Murray Reserve	11
Yarrawonga VEA	proposed Murray River Park including areas of River Murray Reserve	11
Lower Ovens VEA	Warby–Ovens National Park.	12
Warby Range VEA	Warby Range section of Warby–Ovens National Park	12
Parolas VEA	Lower Ovens Wildlife Reserve	13
Stantons VEA	proposed Murray River Park including areas of River Murray Reserve	13
Corowa–Wahgunyah VEA	proposed Murray River Park including areas of River Murray Reserve and Lake Moodemere Lake Reserve and Moodemere Nature Conservation Reserve.	13
Howlong VEA	proposed Murray River Park including areas of River Murray Reserve	13
River Red Gum Drive VEA	Includes Gunbower and Barmah National Parks in Victoria and Murray Valley National Park and Perricoota and Koondrook state forests in New South Wales	
Gunbower Island Forest Drive VEA	Gunbower National Park and Gunbower State Forest	
Murray River Adventure Trail VEA	River-based trail along 1390 km of the Murray River	

Appendix 5: Summary of priority flora and fauna assets

Priority flora and fauna assets are defined here as follows (Greening Australia 2014):

- Priority flora are species listed on Victorian or Commonwealth threatened species lists with more than 70% of their state-wide records from the River Red Gum parks.
- Priority fauna are species listed on Victorian or Commonwealth threatened species lists with 20% of more of state-wide records from the River Red Gum parks.

INLAND WATERS AND WETLANDS

Saline Wetland

Fauna Inland Dotterel, Freckled Duck, Murray Hardyhead

Flora *Phyllanthus lacunarius*

Permanent Freshwater Wetland

Fauna: Golden Perch, Freckled Duck, Silver Perch, Murray Cod, Crimson-spotted Rainbowfish, Superb Parrot, Murray Hardyhead, Freshwater Catfish, Broad-shelled Turtle, Grey Falcon

Flora : *Phyllanthus lacunarius*, *Cyperus rigidellus*, *Nymphoides crenata*, *Centipeda nidiformis*, *Eremophila divaricata* subsp. *divaricata*, *Solanum lacunarium*

Ephemeral Freshwater Wetland

Fauna: Red-naped Snake, Mallee Emu-wren, Ground Cuckoo-shrike, Murray Hardyhead, Superb Parrot, Silver Perch, Freshwater Catfish, Gile's Planigale, Carpet Python, Major Mitchell's Cockatoo, Golden Perch, Apostlebird, Regent Parrot, Freckled Duck

Flora : *Brachyscome* aff. *gracilis* Kings Billabong, *Euphorbia planiticola*, *Menkea crassa*, *Rhodanthe stricta*, *Dianella* sp. aff. *longifolia Riverina*, *Eragrostis exigua*, *Austrobryonia micrantha*, *Swainsona greyana*, *Phyllanthus lacunarius*, *Rorippa eustylis*, *Eremophila bignoniiflora*, *Abutilon malvifolium*, *Nymphoides crenata*, *Eremophila divaricata* subsp. *divaricata*, *Solanum lacunarium*, *Eragrostis setifolia*

Other priority communities Moira grasslands

Riverine Forest and Woodland

Fauna: Mammals Giles' Planigale

Forest birds Regent Parrot, Superb Parrot, Apostlebird, Major Mitchell Cockatoo, Diamond Dove, Spotted Bowerbird, Grey Falcon, Mallee Emu-wren, Ground Cuckoo-shrike

Waterbirds Freckled Duck, Inland Dotterel

Fish Golden Perch, Murray Cod, Silver Perch, Crimson-spotted Rainbowfish, Freshwater Catfish, Murray Hardyhead

Reptiles and amphibians Carpet Python, Broad-shelled Turtle, Mueller's Skink, De Vis' Banded Snake, Giant Bullfrog, Red-naped Snake

Flora: Herbaceous *Eragrostis setifolia*, *Dianella* sp. aff. *longifolia Riverina*, *Nymphoides crenata*, *Rorippa eustylis*, *Swainsona greyana*, *Centipeda nidiformis*, *Hibiscus brachysiphonius*, *Cyperus concinnus*, *Eremophila bignoniiflora*, *Solanum lacunarium*, *Eragrostis exigua*, *Austrobryonia micrantha*, *Brachyscome* aff. *gracilis* Kings Billabong, *Abutilon malvifolium*, *Cyperus rigidellus*, *Neobassia proceriflora*, *Rumex crystallinus* s.s., *Cullen australasicum*, *Glossostigma diandrum*, *Carpobrotus* aff. *rossii* N.W. Victoria, *Lemooria burkittii*

Perennial shrubs *Eremophila divaricata* subsp. *divaricata*, *Atriplex nummularia* subsp. *omissa*, *Phyllanthus lacunarius*

FFG-listed communities: Creekline Grassy Woodland, Granite Foothills Spring Wetland

DRY FOREST AND WOODLANDS

Box–Ironbark Forest

Fauna: Rugose Toadlet, Superb Parrot

Plains Woodlands

Fauna: Golden Perch, Murray Cod, Diamond Dove, Inland Dotterel, Freckled Duck, Major Mitchell's Cockatoo, Ground Cuckoo-shrike, Rugose Toadlet

Flora • *Nymphoides crenata*, *Dianella* sp. aff. *longifolia* Riverina, *Diuris dendrobioides*

FFG Listed communities: Creekline Grassy Woodland, Grey Box – Buloke Grassy Woodland, Northern Plains Grassland

EPBC Listed communities: Buloke woodlands of the Riverina and Murray Darling Depression Bioregions

Mixed Dry Forest

Fauna: Carpet Python, Golden Perch, Silver Perch, Freshwater Catfish, Red-naped Snake, Superb Parrot, Major Mitchell's Cockatoo, Apostlebird, Regent Parrot, Freckled Duck, Broad-shelled Turtle, Mueller's Skink

Flora: Shrubs and Trees *Eremophila divaricata* subsp. *divaricata*, *Acacia triptera*

• **Herbaceous plants** *Swainsona greyana*, *Plagiochasma rupestre*, *Diuris dendrobioides*

GRASSLAND

Fauna: Gile's Planigale

Flora: *Dianella* sp. aff. *longifolia* Riverina, *Phyllanthus lacunarius*, *Eremophila bignoniiflora*, *Solanum lacunarium*, *Rumex crystallinus* s.s., *Eremophila divaricata* subsp. *divaricata*

FFG-listed community: Northern Plains Grassland

