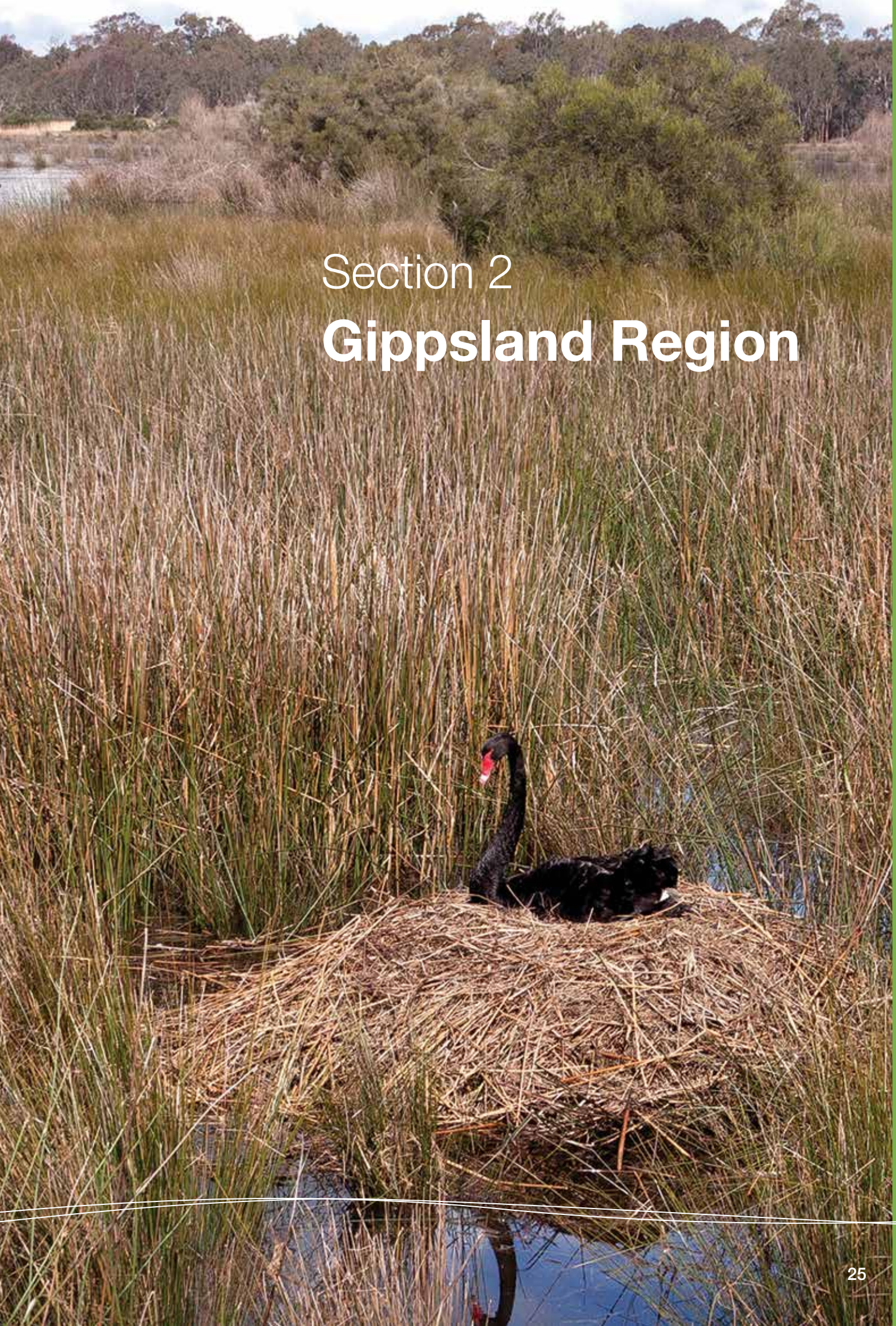

Section 2

Gippsland Region

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2.1 Gippsland Region overview

There are four systems in Gippsland that can receive water from the VEWH's environmental entitlements: the Latrobe (including the Latrobe River and lower Latrobe wetlands), Thomson, Macalister and Snowy systems.

The landscape

The Macalister and Thomson rivers are tributaries of the Latrobe River. The Macalister River flows into the Thomson River at Riverslea, and the Thomson River joins the Latrobe River a short distance downstream near Sale. The Latrobe River then flows past the Latrobe wetlands (Sale Common, Heart Morass and Dowd Morass) before entering Lake Wellington.

The Snowy River flows south from the Snowy Mountains in NSW and into Victoria and Bass Strait. Storages in the Snowy Mountains Hydro-electric Scheme are connected to the Murray and Murrumbidgee systems via a network of tunnels, pipelines and aqueducts. The system is used for electricity generation and to transfer water from the Snowy River to supply irrigated agriculture in the Murray–Darling Basin.

Environmental values

The Latrobe River and lower Latrobe wetlands (Dowd Morass, Heart Morass and Sale Common) support native vegetation and animals of high conservation significance including threatened waterbirds (such as the freckled duck and intermediate egret) and frogs (such as the green and golden bell frog).

The Thomson and Macalister rivers support several species of native fish including the threatened Australian grayling as well as the common galaxia, tupong and short-finned eel. The Snowy River supports Australian grayling, Australian bass and estuary perch.

Community considerations

Traditional Owners and their Nations in the Gippsland Region had and continue to have a deep connection to its rivers, wetlands and floodplains. The VEWH acknowledges the Traditional Owners of Gippsland and pays respect to their Elders past, present and future. It recognises that water has significant cultural importance and value for Traditional Owners and Aboriginal Victorians.

Traditional Owner groups in and around the Gippsland Region (including for areas where there is no environmental water management) include the Bidwell Maap, Bolga, Boon Wurrung (Bunurong), Jaitmatang, Gunaikurnai (representing the Brataualung, Brayakaulung, Brabralung, Krauatungalung and Tatungalung family clans), Monaro-Ngarigo, Taungurung, Waywurru, Wiradjuri and Yuin peoples, among others.

The West Gippsland CMA has been building relationships with Traditional Owner groups in the region, including Boon Wurrung (Bunurong), over the last few years. They are working towards understanding how environmental water management in the West Gippsland area can better support Aboriginal aspirations.

The Latrobe River is used for electricity generation, irrigation, industrial use and town water supply as well as for recreational fishing. Hunters and birdwatchers use the lower Latrobe wetlands and the Thomson and Snowy rivers are popular for canoeing and kayaking. The Macalister River is part of the Macalister Irrigation District, which draws community attention to its water quality, erosion and vegetation condition. It's also popular for birdwatchers.

Year by year and case by case, the VEWH and its program partners consider opportunities raised by communities to use environmental water to provide additional social, cultural and recreational benefits (for example, releasing environmental water increases the enjoyment of people camping by a waterway, or publicising an environmental water release in advance provides more opportunities for kayakers). Where possible, the VEWH and its program partners incorporate such opportunities into watering decisions, as long as they do not compromise environmental outcomes or increase demand on the water holdings.

When the VEWH plan to use water for the environment, the potential social, economic, aboriginal cultural, and recreational benefits for communities, which could arise from the water's use are considered. Some scoped opportunities for shared community benefits of environmental water in the Gippsland Region for 2017–18 include:

- timing planned flows over long weekends in the upper Thomson River (where there is an overlap with migratory fish spawning and recruitment seasons), to increase whitewater rafting opportunities for kayakers and canoeists
- improving amenity and wetland health to benefit walkers, cyclists, birdwatchers, hunters and campers around the lower Latrobe wetlands
- releasing environmental flows to support downstream migration and recruitment of Australian bass in the Thomson and Macalister rivers, and estuary perch in the Thomson River, increasing opportunities for recreational anglers.

The VEWH's ability to deliver these benefits depends on climate, water available and the way the system is being operated to deliver water for other purposes (such as to homes, farms or businesses).

For more information about scoped opportunities for shared community benefits in 2017–18, contact the VEWH or the relevant waterway manager.

Integrated catchment management

Altered water regimes are one of many threats to the health of Victoria's waterways. To be effective, environmental water planning and releases need to be part of an integrated approach to catchment management. Many of the environmental objectives in this Seasonal Watering Plan will not be fully met without simultaneously addressing excessive catchment erosion, barriers to fish movement, high nutrient loads, loss of streambank vegetation and invasive species, to name just a few issues.

Victorian and Australian government agencies, community groups and private landowners implement many programs to protect and improve the environmental condition and function of land, soils and waterways throughout Victoria's catchments. Activities in the Gippsland Region that are planned and implemented to coordinate with environmental water management include:

- work to protect and enhance streambanks along priority reaches of rivers and their tributaries including fencing to exclude stock, revegetation of riverbanks, invasive species control and waterway stabilisation
- work with farmers in the Thomson and Macalister areas on grazing and soil management, and on nutrient and water-use-efficiency projects that help improve water quality and river health
- planning for a fishway on the Thomson River to improve fish passage near the heritage-listed Horseshoe Bend Tunnel and to open up an extra 85 km of habitat for migratory fish including Australian grayling (which environmental water releases target). If the fishway is not built, the ability to meet environmental water objectives for Australian grayling will be limited. The innovative fishway design and construction techniques will protect and enhance the site's important heritage, environmental, recreational and cultural values
- a weed and willow control program in the Snowy River catchment, which has led to 200 km of the river being willow-free: native vegetation is now flourishing and provides a valuable food source and habitat for animals.

For more information about integrated catchment management programs in the Gippsland Region refer to the West Gippsland and East Gippsland regional catchment strategies and waterway strategies.

Seasonal outlook 2017–18

Environmental water available for use in the Latrobe, Thomson and Macalister systems is held in Blue Rock Reservoir, Thomson Reservoir and Lake Glenmaggie respectively.

The Thomson system receives a secure annual allocation (which is available on 1 July each year) as well as a share of the annual inflows to the Thomson Reservoir. The total volume of environmental water available in the Thomson system has recently been bolstered by the recovery of an additional 8 GL of environmental water (3.9 percent of inflows to Thomson Dam). In the Latrobe and Macalister systems, water availability depends more on seasonal conditions. Most inflows occur in winter and spring, so more will be known about likely allocations early in 2017–18.

Under moderate streamflow forecasts, environmental water is expected to be available to achieve the highest-priority watering actions in the Latrobe, Thomson and Macalister rivers. Additional environmental water may be sought via transfers from within the Gippsland system or from another region, if seasonal allocations are not adequate to meet critical environmental outcomes.

The Latrobe wetlands receive most water from natural and unregulated flows. Water can also be actively diverted from the Latrobe River into Sale Common, Heart Morass or Dowd Morass when river levels are high.

Planning and delivery of environmental water in the Snowy system is managed by the NSW Department of Primary Industries, which consults the Victorian and Australian governments and stakeholder groups about environmental water released to the Snowy River.

Aerial view of the upper Latrobe, by David Stork

2.2 Latrobe system

Waterway manager – West Gippsland Catchment Management Authority

Storage manager – Southern Rural Water

Environmental water holder – Victorian Environmental Water Holder

The Latrobe system (which includes the Latrobe River and lower Latrobe wetlands) is one of the most modified rivers in Victoria, yet it still supports plant and animal species of high conservation significance including several threatened vegetation types and waterbird, fish and frog species. The Latrobe River also provides an essential source of freshwater to the Ramsar-listed Gippsland Lakes site, of which the lower Latrobe wetlands are an important component.

Engagement

Table 2.2.1 shows the partners and stakeholder organisations with which West Gippsland CMA engaged when preparing the Latrobe system seasonal watering proposal.

Seasonal watering proposals are informed by longer-term regional catchment strategies and regional waterway strategies and by environmental flow studies, water management plans and other studies. The strategies incorporate a range of environmental, cultural, social and economic perspectives and longer-term integrated catchment and waterway management objectives. For further details, refer to the West Gippsland Regional Catchment Strategy and West Gippsland Waterway Strategy.

Table 2.2.1 Partners and stakeholders engaged in developing the Latrobe system seasonal watering proposal

Partner and stakeholder engagement
• Wetlands Environmental Taskforce, a registered environmental organisation that purchases and restores wetlands in Australia
• Field and Game Australia
• Latrobe Valley Field Naturalists Club
• irrigators and farmers
• Southern Rural Water
• Parks Victoria
• VEWH

2.2.1 Latrobe River

The Latrobe River originates on the Mount Baw Baw Plateau and flows into Lake Wellington, the westernmost point of the Gippsland Lakes.

Environmental values

The upper Latrobe River is relatively intact and contains some continuous stands of river red gums and a tall shrub layer. The banks along the lower reaches support stands of swamp scrub, an endangered vegetation type that is characterised by swamp paperbark and tea tree. Mature river red gums grow adjacent to the lower Latrobe wetlands and provide nesting habitat for sea eagles and other birds of prey that hunt in the wetlands. The Latrobe River contains native estuarine and freshwater fish species including black bream, Australian bass, Australian grayling and short- and long-finned eel.

The lower Latrobe River flows through the Latrobe Valley and is very degraded due to historic river management practices. Most snags have been removed from the river and many sections have been artificially straightened. These actions have reduced much of the habitat on which aquatic plants and animals depend.

Social, cultural and economic values

Despite the recent closure of Hazelwood Power Station, the Latrobe Valley remains central to Victoria's energy industry, and water from the Latrobe River is essential for electricity generation. The lower Latrobe River is commercially fished for eel and carp. It also contains black bream and estuary perch, which are favoured by recreational fishers. The waterways in the Latrobe system hold significance for Traditional Owners. Waterways and wetlands in the region contain important ceremonial places and for thousands of years the Latrobe River provided resources such as food and medicines to the Gunaikurnai people. Many of the region's wetlands are popular with walkers, birdwatchers and hunters.

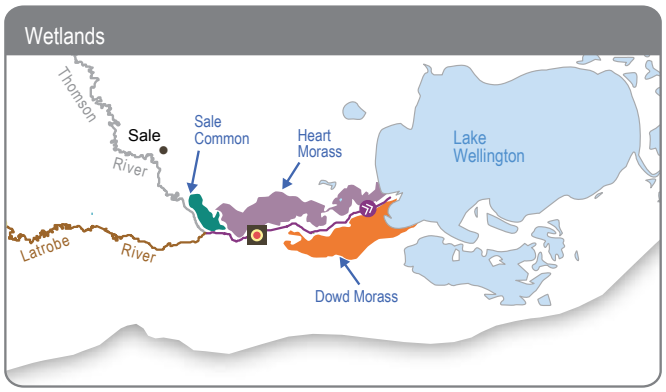
Environmental watering objectives in the Latrobe River

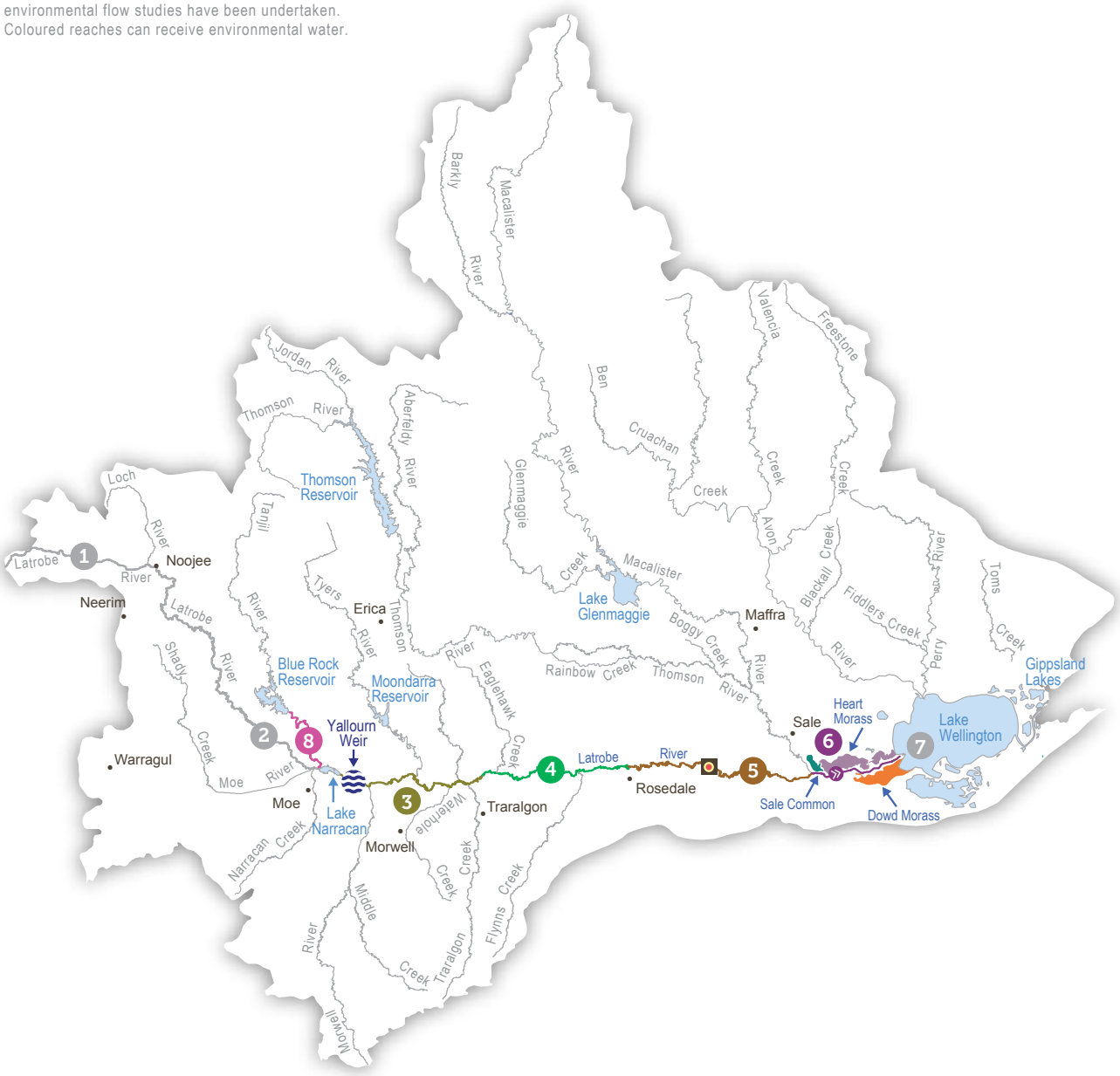
	Form in-stream bars to help stabilise the structure and condition of the river channel, helping reduce the load of sediment and nutrients flowing into the Gippsland Lakes
	Establish native plants on bars and lower parts of the banks to stabilise the river channel
	Improve habitat for native fish including black bream and estuary perch

Figure 2.2.1 The Latrobe system

Reach 1 Upstream of Willow Grove
Reach 2 Willow Grove to Lake Narracan
Reach 3 Lake Narracan to Scarnes Bridge
Reach 4 Scarnes Bridge to Rosedale
Reach 5 Rosedale to Thomson River confluence
Reach 6 Downstream of Thomson confluence
Reach 7 Lake Wellington
Reach 8 Tanjil River
Water infrastructure
Measurement point
Town
Indicates direction of flow

Grey river reaches have been included for context. The numbered reaches indicate where relevant environmental flow studies have been undertaken. Coloured reaches can receive environmental water.





System overview

Environmental water is supplied to the Latrobe River from Blue Rock Reservoir on the Tanjil River. The reservoir also supplies water for other entitlement holders including electricity generators in the Latrobe Valley.

The Latrobe River from Rosedale to the Thomson River confluence (reach 5) is the priority for environmental watering because it contains endangered plant communities that have good potential for recovery.

Recent conditions

Unregulated flows associated with above-average rainfall in winter and spring 2016 met the environmental targets for low flows and freshes between July and October. Simultaneous high flows in the Thomson River and upper Latrobe River caused minor flooding in the lower Latrobe River in July 2016. High inflows to Blue Rock Reservoir meant that the maximum environmental allocation of 18,737 ML was reached in August. This meant the West Gippsland CMA was in a good position to deliver environmental water for the remainder of the year.

Summer and autumn 2017 had below-average rainfall. Summer low flows were below the recommended environmental flow requirements and freshes were infrequent. A planned environmental flow release from Blue Rock Reservoir to relieve environmental stress associated with unnaturally low flows in February was cancelled because of concern that increased flows would flush poor-quality water into the Tanjil River and compromise the local town supply. This is a good example of the challenges of managing environmental water deliveries to rivers that are used for multiple purposes (such as water supply, industry and recreation).

An autumn fresh of 1,300 ML/day was delivered in April and May 2017. The release was coordinated with releases in the Macalister and Thomson rivers to create a flow that was large enough to flush the salt wedge that forms in the lower Latrobe River each summer.

Scope of environmental watering

Table 2.2.2 shows potential environmental watering actions and their environmental objectives.

Table 2.2.2 Potential environmental watering actions and objectives for the Latrobe River

Potential environmental watering	Environmental objectives
Spring/summer freshes (1,300 ML/day for 2–4 days in September–February)	• Increase vegetation diversity, condition and abundance along lower banks and increase recruitment of in-stream vegetation
Autumn/winter freshes (1,300 ML/day for 2–4 days in March-August)	
Winter/spring low flows (690–1,500 ML/day in June–November)	• Form in-stream bars (elevated deposits of sediment and gravel in the river channel)
Summer/autumn low flows (up to 690 ML/day in December–May)	• Provide in-stream habitat for aquatic biota (especially waterbugs, fish and vegetation)

Scenario planning

Table 2.2.3 outlines the potential environmental watering and expected water use under a range of planning scenarios.

The long-term aim for the Latrobe River is to rehabilitate vegetation and improve the channel structure. Spring freshes help to achieve these objectives by accelerating the growth of established riparian vegetation and increasing the recruitment of new plants, which in turn stabilises banks and increases habitat.

Climate and rainfall from July to November is an important consideration in deciding when to use environmental water to meet vegetation objectives. In a drought or dry year there is likely to be only a small contribution from unregulated flows, so delivery freshes in spring and summer are a high priority to maintain riparian vegetation. A secondary priority under drought and dry scenarios is to deliver high-magnitude winter low flows in June to assist with formation of in-stream bars and to prevent encroachment of terrestrial vegetation.

Inflows during an average or wet year are likely to cause Blue Rock Reservoir to spill, which should meet the main environmental flow objectives for spring. Under such circumstances, environmental water that would normally be used for spring freshes can be reserved to meet other objectives in late summer and autumn.

Table 2.2.3 Potential environmental watering for the Latrobe River under a range of planning scenarios

Planning scenario	Drought	Dry	Average	Wet
Expected river conditions	• Small contributions from unregulated reaches and tributaries of the Latrobe River with little opportunity for freshes to occur naturally • Consumptive demand from Blue Rock Reservoir will be very high and regular releases to the Tanjil River will contribute substantially to low flows	• There will be some unregulated flows that contribute to low flows and freshes, but extended periods of high flows will be absent and freshes will be infrequent • Consumptive demand from Blue Rock Reservoir will be high and contribute to low flows	• Unregulated flows will provide low flows and multiple freshes, most likely in winter and spring • Some spills are likely and there will be releases for consumptive users which will partly contribute to low flows	• Multiple spills from Blue Rock Reservoir will provide extended durations of high flows and overbank flows • No significant releases from consumptive entitlements in Blue Rock Reservoir are likely
Expected availability of environmental water	• 16,200 ML	• 18,200 ML	• 18,700–23,200 ML	• 18,700–31,200 ML
Potential environmental watering	• 1 spring/summer fresh • 1 autumn/winter fresh • Winter/spring low flows	• Up to 3 spring/summer freshes • Up to 2 autumn/winter freshes • Winter/spring low flows • Summer/autumn low flows	• Up to 3 spring/summer freshes • Up to 3 autumn/winter freshes • Winter/spring low flows • Summer/autumn low flows	• Up to 4 spring/summer freshes • Up to 4 autumn/winter freshes • Winter/spring low flows • Summer/autumn low flows
Possible volume of environmental water required to achieve objectives	• 12,300 ML	• 11,200 ML	• 15,900 ML	• 0–11,000 ML

Risk management

In preparing its seasonal watering proposal, West Gippsland CMA considered and assessed the risks of environmental watering and identified mitigation strategies. Program partners continually reassess risks and mitigation actions throughout the water year (see section 1.3.6).

2.2.2 Lower Latrobe wetlands

The lower Latrobe wetlands are Sale Common, Dowd Morass and Heart Morass. The wetlands are on the floodplain of the Latrobe River between its confluence with the Thomson River and Lake Wellington.

Environmental values

The lower Latrobe wetlands (Dowd Morass, Heart Morass and Sale Common) are an important component of the internationally recognised Gippsland Lakes Ramsar site and provide habitats for a variety of waterbirds. Colonial waterbirds (such as royal spoonbill and straw-necked and Australian white ibis) breed in spring among the swamp paperbark trees at these wetlands. Migratory shorebirds (such as sandpipers) feed on the mudflats that are exposed as the wetlands draw down and dry over summer. Waterfowl and fish-eating birds (such as egrets) use available open-water habitat at the wetlands year-round.

Saltwater intrusion from the Gippsland Lakes is a constant threat to environmental values in Dowd Morass and Heart Morass. Rising sea levels from climate change will continue to exacerbate that threat. Although Heart Morass's vegetation has been degraded by many years of grazing, much wetland on private property is now recovering with the aid of restoration programs. The establishment and growth of aquatic vegetation is affected by carp in all wetlands. An invasive aquatic weed, Brazilian milfoil, has colonised much of the fringe of Sale Common, whereas its spread to Heart Morass and Dowd Morass is probably limited by salinity in those wetlands.

Social, cultural and economic values

Sale Common is a state game refuge located close to the city of Sale that provides an excellent opportunity to observe native plants and animals. Dowd Morass is a state game reserve commonly used by hunters. Heart Morass consists of mostly private landholdings and is also used by hunters. An appropriate water regime in the lower Latrobe wetlands increases waterbird abundance and provides opportunities for birdwatching and hunting when the wetlands are in a wet phase.

The lower Latrobe wetlands hold significance for Traditional Owners. Waterways and wetlands in the area contain important ceremonial places and for thousands of years the lower Latrobe wetlands have provided resources such as food and medicines to the Gunaikurnai people.

Environmental watering objectives in the lower Latrobe wetlands

	Increase dispersal and germination of wetland plants
	Provide habitat for waterbirds
	Reduce the abundance of carp, particularly at Sale Common and Dowd Morass

System overview

River regulation and water extraction from the Latrobe, Thomson and Macalister rivers has reduced the frequency of small and medium-sized floods that naturally inundate the lower Latrobe wetlands. Construction of levees and drains and the filling in of natural depressions have also altered water movement into and through the wetlands. The drainage and flooding regime in all three wetlands is now managed to some extent by using regulators connected to the Latrobe River.

Recent conditions

Although inflows to the wetlands were infrequent and small-scale in 2016–17, inflows from the Latrobe River to Sale Common, Dowd Morass and Heart Morass did occur in winter. The 2016–17 summer and autumn was quite mild, and the wetlands' levels have not receded as much as they did the previous year.

In Sale Common, there was an excellent environmental response in winter. Filling began slowly in June, providing clear water that prompted good growth of aquatic vegetation. Vegetation growth was helped by the low abundance of carp, which were screened from the wetland. A larger overbank flow in July inundated the wetland with more turbid water and lots of carp, but it also triggered the largest breeding event of black swans locals have seen in a decade.

A combination of low water levels in Dowd Morass, a strong easterly wind and a high tide caused saltwater intrusion from Lake Wellington to Dowd Morass in May 2016. Salinity increased in Dowd Morass to almost half that of seawater (19,000 EC), threatening the condition of swamp paperbark that ibis and spoonbill use for nesting. Regulators to Dowd Morass from the Latrobe River are old and were not designed to manage environmental water. On their own, the regulators cannot provide the necessary volume of freshwater from the Latrobe River to dilute salt build-up in Dowd Morass. Large natural inflows in July eventually reduced salinity to about 4,000 EC and the main regulator to Dowd Morass has remained open all year to allow as much mixing as possible. Despite this, salinity levels remained higher than the desired threshold. New regulators for managing environmental flows in Dowd Morass and Heart Morass have been designed and will be constructed when funding is available.

Although salt water intruded into Heart Morass in 2016, the impacts were not severe because levees protected it from Lake Wellington and the wetland was partially filled with environmental water from the Latrobe River in autumn 2016. The environmental water provided in March–May 2016 was the first delivery to Heart Morass under the *Lower Latrobe Wetlands Environmental Entitlement 2010*. The delivery was made with the agreement of private property owners in the wetland, and it provided great benefit for swans that fed on the wetland plants that germinated as a result of the delivery.

Scope of environmental watering

Table 2.2.4 shows potential environmental watering actions and their environmental objectives.

Table 2.2.4 Potential environmental watering actions and objectives for the lower Latrobe wetlands

Potential environmental watering	Environmental objectives
Sale Common	
Fill or partial fill (July–November)	• Increase the growth and recruitment of wetland plants, particularly tall marsh, aquatic herbland and aquatic sedgeland • Provide feeding and breeding habitat for wetland animals, particularly waterbirds and frogs
Fill or partial fill (any time)	• Control invasive plants and algae
Partial or complete drawdown (year-round, primarily August–March)	• Oxygenate surface soils, break down accumulated organic matter and cycle nutrients • Increase the growth and recruitment of wetland plants across the wetland bed • Reduce the abundance of European carp
Fill or partial fill (February–May)	• Provide feeding and sheltering habitat for wetland animals, particularly waterbirds and frogs • Restrict the spread of giant rush
Dowd Morass and Heart Morass	
Fill or partial fill (Dowd Morass: July–November) (Heart Morass: July–December)	• Trigger colonial waterbird breeding • Reduce salinity • Increase the growth and recruitment of wetland plants, particularly swamp scrub, tall marsh, aquatic herbland and brackish herbland • Provide feeding and breeding habitat for wetland animals, particularly waterbirds and frogs
Partial or complete drawdown (year-round, primarily August–March)	• Oxygenate surface soils, break down accumulated organic matter and cycle nutrients • Increase the growth and recruitment of wetland plants, particularly swamp shrub, tall marsh, aquatic herbland and brackish herbland • Reduce the abundance of European carp
Fill or partial fill (February–May)	• Provide feeding habitat for wetland animals, particularly waterbirds
Fill or partial fill (any time)	• Control salinity and reduce the risk of acid sulphate soils

Scenario planning

Table 2.2.5 outlines the potential environmental watering and expected water use under a range of planning scenarios.

Natural flows are very influential in the Latrobe wetlands. In a drought and dry year, all three wetlands are likely to draw down and may dry completely. Partial drawdowns will occur in an average year, but if conditions are wet the ability to manage drawdown is diminished, and uncontrolled flows will provide widespread inundation throughout the year.

The approach in 2017–18 will be to allow water levels to fluctuate according to natural seasonal conditions. Some small-scale flooding and controlled drainage may be managed to mimic and amplify the natural conditions and improve environmental outcomes. Partial fills or top-ups may be delivered at any time to mitigate risks of high salinity and activation of acid sulphate soils, or to provide habitat and breeding opportunities for waterbirds.

Table 2.2.5 Potential environmental watering for the lower Latrobe wetlands under a range of planning scenarios

Planning scenario	Drought	Dry	Average	Wet
Expected catchment conditions	• No natural inflows from the Latrobe River, and wetlands are likely to dry completely	• Minor natural inflows from the Latrobe River at any time of the year	• Moderate winter and spring flows in the Latrobe River are likely to fill or partially fill the wetlands; expect minor drawdown in summer	• Major flows in the Latrobe River in winter/spring and possibly autumn/ winter are likely to fill all wetlands
Sale Common				
Potential environmental watering[1]	• Complete drawdown (July–June) • Fill or partial fill (any time)	• Partial drawdown (August–April) • Fill or partial fill (any time) • Fill or partial fill (February–May)	• Fill or partial fill (July–November) • Fill or partial fill (February–May) • Fill or partial fill (any time) • Partial drawdown (August–March)	• Fill (July–November) • Fill or partial fill (February–May) • Fill or partial fill (any time) • Partial drawdown (December–March)
Possible volume of environmental water required to achieve objectives	• 0–1,300 ML	• 0–2,600 ML	• 0–2,600 ML	• 0 ML
Dowd Morass				
Potential watering actions[1]	• Complete drawdown (July–June) • Fill or partial fill (any time)	• Fill or partial fill (any time) • Partial drawdown (August–April) • Fill or partial fill (February–May)	• Fill or partial fill (July–November) • Fill or partial fill (any time) • Partial drawdown (August–March) • Fill or partial fill (February–May)	• Fill (July–November) • Partial drawdown (December–March) • Fill or partial fill (February–May) • Fill or partial fill (any time)
Possible volume of environmental water required to achieve objectives	• 0–5,800 ML	• 0–11,600 ML	• 0–11,600 ML	• 0 ML
Heart Morass				
Potential watering actions[1]	• Complete drawdown (July–June) • Fill or partial fill (any time)	• Fill or partial fill (any time) • Partial drawdown (August–April) • Fill or partial fill (February–May)	• Fill or partial fill (July–December) • Fill or partial fill (February–May) • Fill or partial fill (any time) • Partial drawdown (August–April)	• Fill (July–December) • Fill or partial fill (February–May) • Fill or partial fill (any time) • Partial drawdown (December–March)
Possible volume of environmental water required to achieve objectives	• 0–7,100 ML	• 0–14,200 ML	• 0–14,200 ML	• 0 ML

[1] *Potential watering actions are listed in priority order for each scenario. The order and timing may vary within scenarios depending on inter-seasonal variability.*

Risk management

In preparing its seasonal watering proposal, West Gippsland CMA considered and assessed the risks of environmental watering and identified mitigation strategies. Program partners continually reassess risks and mitigation actions throughout the water year (see section 1.3.6).

2.3 Thomson system

Waterway manager – West Gippsland Catchment Management Authority

Storage managers – Melbourne Water (Thomson Reservoir), Southern Rural Water (Cowwarr Weir)

Environmental water holder – Victorian Environmental Water Holder

The Thomson River flows from the slopes of the mountains of the Baw Baw Plateau to join the Latrobe River south of Sale. The major tributaries of the Thomson River are the Aberfeldy, Jordan and Macalister rivers, with most unregulated flows originating from the Aberfeldy River.

Environmental values

The Thomson River supports seven species of migratory fish that need to move between the sea and freshwater environments during parts of their life cycle. The threatened Australian grayling is the most significant of these species and is one of the species targeted with environmental flows in the Thomson River. Australian grayling spawn in response to autumn high flows, and the eggs and juveniles spend time at sea before returning to the freshwater reaches of coastal rivers.

The composition and condition of riparian vegetation varies throughout the Thomson River catchment. The vegetation is intact and near-natural upstream of Thomson Reservoir in the Baw Baw National Park. Between Thomson Reservoir and Cowwarr Weir it is mostly in good condition but is moderately infested with blackberry and gorse. Downstream of the Cowwarr Weir, the vegetation is degraded due to stock access and widespread weed invasion.

Social, cultural and economic values

Thomson Reservoir is the largest storage in Melbourne's water supply system and also supplies water to irrigators and towns in Gippsland.

The Thomson River is highly valued for recreation downstream of the Thomson Reservoir to upstream of Cowwarr Weir. The area is popular for camping, kayaking and canoeing. Avid kayakers, canoeists and outdoor recreation operators often take advantage of the whitewater conditions provided with environmental water releases in the upper reaches of the Thomson River.

Waterways in the Thomson system including the Thomson River continue to hold significance for Traditional Owners. Rivers and wetlands in the region contain important ceremonial places and for thousands of years the Thomson River has provided resources such as food and materials to Traditional Owner groups (such as the Gunaikurnai people).

Environmental watering objectives in the Thomson system

	Protect and increase populations of native fish, specifically Australian grayling, by providing pool habitat and flows for fish to move upstream and downstream, and to cue spawning
	Scour silt build-up in the river bed to improve the quality of in-stream habitat for aquatic plants and animals
	Increase recruitment and growth of native riparian vegetation

System overview

Environmental water in the Thomson system is held in Thomson Reservoir. A new environmental entitlement in the Thomson system which will provide an additional 3.9 percent of Thomson Reservoir inflows per year will become available for the first time in 2017–18. This extra environmental water will help meet more of the environmental flow objectives for the Thomson River and will provide benefits to native fish including Australian grayling, tupong and Australian bass.

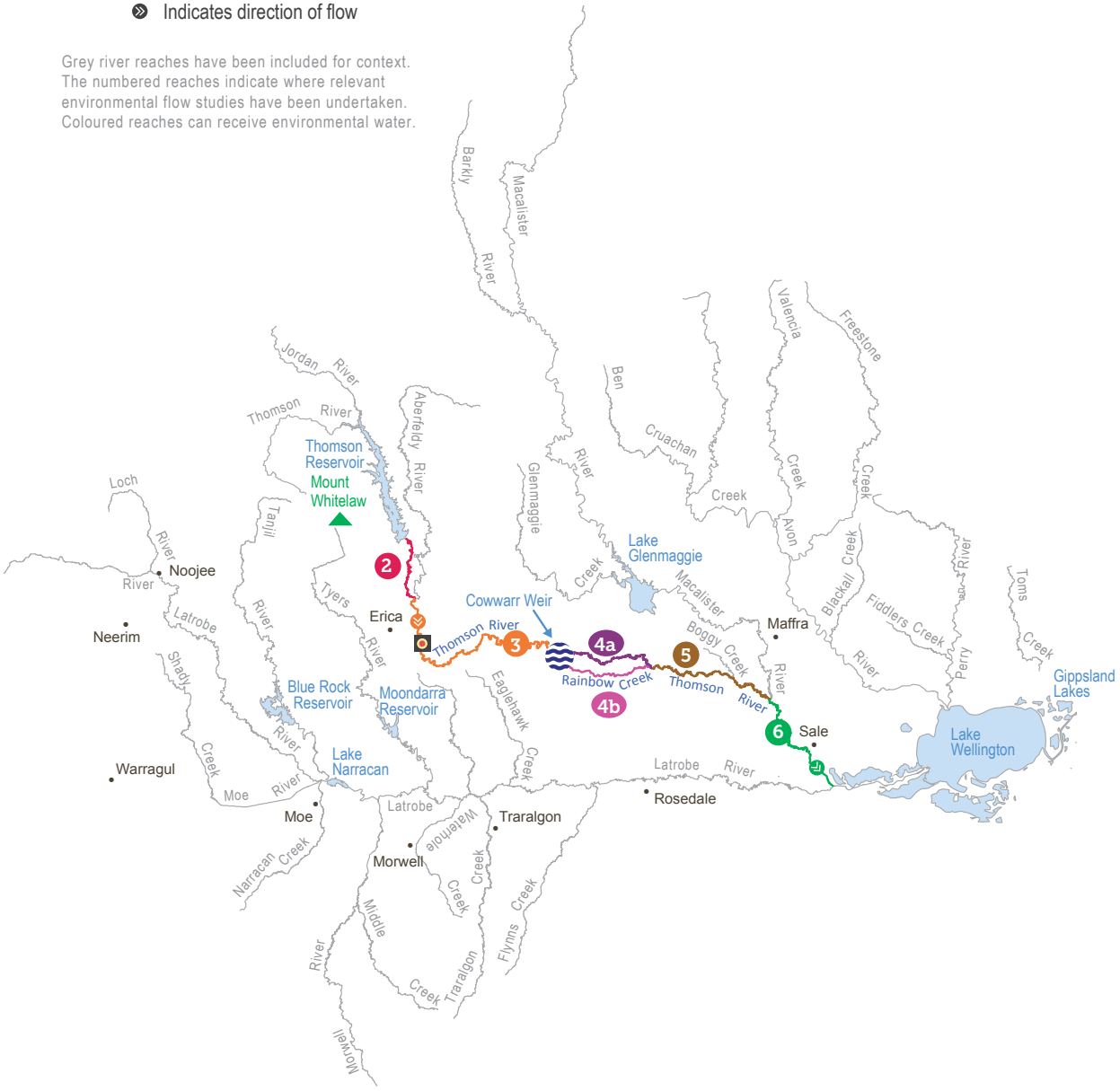
Reach 3 of the Thomson River (from the Aberfeldy River confluence to Cowwarr Weir) is the highest priority for environmental watering due to its heritage river status, relatively intact native riparian vegetation, high-quality in-stream habitat and low abundance of exotic fish species.

At Cowwarr Weir, the Thomson River splits in two and water can move down the old Thomson River course (reach 4a) and Rainbow Creek (reach 4b). The preference is to pass environmental water down the old Thomson River course to enable fish migration, as Cowwarr Weir prevents migration through Rainbow Creek. The passing flows are split two-thirds down reach 4a and one-third down 4b throughout the year to avoid impacts on Rainbow Creek irrigation customers.

Figure 2.3.1 The Thomson system

Reach 2 Thomson River: Thomson Dam to Aberfeldy River
Reach 3 Thomson River: Aberfeldy River to Cowwarr Weir
Reach 4a Old Thomson River: Cowwarr Weir to Rainbow Creek
Reach 4b Rainbow Creek: Cowwarr Weir to Thomson River
Reach 5 Thomson River: Rainbow Creek/Old Thomson confluence to Macalister River
Reach 6 Thomson River: Macalister River to Latrobe River
Water infrastructure
Measurement point
Town
Indicates direction of flow

Grey river reaches have been included for context. The numbered reaches indicate where relevant environmental flow studies have been undertaken. Coloured reaches can receive environmental water.



Recent conditions

Climatic conditions have varied significantly over the last two years. The 2015–16 water year had below-average rainfall and was very dry. The 2016–17 water year had average to above-average rainfall throughout the winter and spring and below-average rainfall in summer and autumn. These conditions contributed to high and frequent irrigation demands during summer for the last two years.

Environmental water releases in recent years have focussed on providing autumn and spring freshes for spawning and recruitment opportunities for native fish species including Australian grayling, tupong and Australian bass. Low flows have also been provided to enable fish to move between habitats along the river. Wet conditions in winter and spring 2016 meant some of the planned environmental water deliveries were not needed because the objectives were met by unregulated flows. Two spring freshes, two winter freshes and one bankfull event were provided via unregulated flows in 2016–17.

An autumn fresh was provided in 2016 with a reduced magnitude (600 ML/day peak flow rather than 800 ML/day) to test whether Australian grayling would spawn at a lower flow. Monitoring during the event detected very little spawning and therefore the autumn fresh in autumn 2017 and the planned fresh for autumn 2018 will deliver peaks of 800 ML/day, which is known to trigger Australian grayling spawning behaviour.

Scope of environmental watering

Table 2.3.1 shows potential environmental watering actions and their environmental objectives.

Table 2.3.1 Potential environmental watering actions and objectives for the Thomson system

Potential environmental watering	Environmental objectives
Spring freshes (1–2 freshes of 800 ML/day for 4 days each in September–October)	• Encourage recruitment of juvenile migratory fish species from the estuary and ocean
Spring low flows (230 ML/day from October–November)	• Provide improved passage along the river to enable localised fish movement between habitats
Autumn freshes (1–2 freshes of 800 ML/day for 4 days each in April–May)	• Provide a downstream migration and spawning cue for migratory fish species including Australian grayling
Autumn/winter low flows (230 ML/day from May–June)	• Provide improved passage along the river to enable localised fish movement between habitats
Winter freshes (up to 4 freshes of 800 ML/day for 4 days in June–August)	• Provide a migration and spawning cue for migratory fish species including tupong and Australian bass • Maintain/increase riparian vegetation
Summer/autumn freshes (up to 7 freshes of 230 ML/day for 4 days in December–April)	• Maintain/enhance the native fish community structure by providing habitat • Maintain/increase submerged aquatic vegetation • Scour sediment exposing fresh habitat areas • Maintain/enhance habitat for waterbugs

Scenario planning

Table 2.3.2 outlines the potential environmental watering and expected water use under a range of planning scenarios.

The highest environmental water priorities in the Thomson River in 2017–18 include autumn and winter high flows to provide cues for migration and spawning of Australian grayling and other migratory species, spring freshes to trigger recruitment of juvenile diadromous fish species to move into the river from the estuary or the sea, and autumn/winter low flows to connect pool habitats and allow fish to move along the river to access food and other resources. The priorities apply to the drought and dry scenarios. Under average or wet conditions, many of the environmental flow objectives will likely be met by unregulated flows. Under those circumstances, environmental water may be used to deliver spring freshes and additional winter freshes to increase migration and recruitment opportunities.

Table 2.3.2 Potential environmental watering for the Thomson system under a range of planning scenarios

Planning scenario	Drought	Dry	Average	Wet
Expected river conditions	• Unregulated flows very limited • Large volumes of consumptive water released from storage	• Unregulated flows from the Aberfeldy River and other tributaries contribute to baseflows and freshes • Moderate volumes of consumptive water released from storage	• Unregulated flows from the Aberfeldy River and other tributaries contribute to baseflows, freshes and high flows • Some consumptive water released from storage	• Unregulated flows from the Aberfeldy River and other tributaries contribute to baseflows, freshes and sustained high flows • Minimal consumptive water released from storage
Expected availability of environmental water	• 17,000–20,000 ML	• 20,000–23,000 ML	• 23,000–26,000 ML	• 26,000–>29,000 ML
Potential environmental watering – tier 1 (high priorities)	• 1 autumn fresh • Spring and autumn low flow • 1 winter fresh • 1 summer fresh	• 1 autumn fresh • Spring and autumn low flow • 1 winter fresh • 1 summer fresh	• 1 autumn fresh • Spring and autumn low flow • 1 winter fresh • 1 spring fresh • 1 summer fresh	• 1 autumn fresh • Spring and autumn low flow • 2 winter freshes • 1 spring fresh • 1 summer fresh
Potential environmental watering – tier 2 (lower priorities)[1]	• 1 spring fresh • Increase duration of autumn low flow	• 1 spring fresh	• 1 winter fresh • Increase duration of autumn low flow	• 1 winter fresh • Increase duration of autumn low flow
Possible volume of environmental water required to achieve objectives[2]	• 14,600 ML (tier 1) • 6,200 ML (tier 2)	• 16,900 ML (tier 1) • 3,900 ML (tier 2)	• 20,500 ML (tier 1) • 4,420 ML (tier 2)	• 23,600 ML (tier 1) • 4,580 ML (tier 2)
Priority carryover requirements	• 5,400 ML			

1 *Tier 2 actions are lower-priority actions to be considered if water is available.*

2 *Environmental water requirements for tier 2 actions are additional to tier 1 requirements.*

Risk management

In preparing its seasonal watering proposal, West Gippsland CMA considered and assessed the risks of environmental watering and identified mitigation strategies. Program partners continually reassess risks and mitigation actions throughout the water year (see section 1.3.6).

Engagement

Table 2.3.3 shows the partners with which West Gippsland CMA engaged when preparing the Thomson system seasonal watering proposal.

Seasonal watering proposals are informed by longer-term regional catchment strategies and regional waterway strategies and by environmental flow studies, water management plans and other studies. The strategies incorporate a range of environmental, cultural, social and economic perspectives and longer-term integrated catchment and waterway management objectives. For further details, refer to the West Gippsland Regional Catchment Strategy and West Gippsland Waterway Strategy.

Table 2.3.3 Partners engaged in developing the Thomson system seasonal watering proposal

Partner engagement
• Southern Rural Water • Melbourne Water • VEWH

2.4 Macalister system

Waterway manager – West Gippsland Catchment Management Authority

Storage manager – Southern Rural Water

Environmental water holder – Victorian Environmental Water Holder

The Macalister River flows from Mt Howitt in the Alpine National Park to join the Thomson River south of Maffra. The river meanders in a south-easterly direction through predominantly forested, confined valleys and narrow floodplains upstream of Lake Glenmaggie to cleared, wide, alluvial floodplains downstream. The Macalister River is regulated by Lake Glenmaggie, the major water-harvesting storage and Maffra Weir, a small diversion weir located further downstream in the Maffra township. Both storages divert water for irrigation, urban and industrial purposes. Environmental water is stored in Lake Glenmaggie.

Environmental values

There are seven migratory native fish species in the Macalister River that move between freshwater and marine environments to complete their life cycle. These are the Australian grayling, short- and long-finned eel, tupong, Australian bass, short-headed lamprey and common galaxias. Platypus and water rat are widely distributed through the Macalister River and its tributaries.

The riparian vegetation corridor is fragmented. Immediately downstream of Lake Glenmaggie, the vegetation is in good condition and includes remnant river red gums. It is degraded elsewhere. The cover of in-stream vegetation and non-woody plants that colonise the fringes of the river (such as reeds, sedges and rushes) have declined in recent years. The decline may be due to a combination of increased water turbidity, erosion and lack of an appropriate water regime to encourage plant growth.

Social, cultural and economic values

The Macalister Irrigation District is the major economic driver in the area and water from the Macalister system is highly valued by the local community. As a result, there is a genuine interest in the health of the Macalister River, particularly around water quality, erosion and vegetation condition. People also use the river for recreational fishing and birdwatching. The waterways in the Macalister system including the Macalister River continue to hold significance for Traditional Owners. Waterways and wetlands in the region contain important ceremonial places and for thousands of years the Macalister River provided resources such as food and medicines for the Gunaikurnai people.

Environmental watering objectives in the Macalister system

	Increase the range and population size of native fish species including Australian grayling and other native migratory fish
	Improve vegetation communities including macrophytes (large water plants) in the river channel Improve fringing woody vegetation in the riparian zone
	Increase the abundance and number of waterbugs
	Maintain the form of the river bank and bed

System overview

Before Lake Glenmaggie was built, the Macalister River would regularly receive high and medium flows in winter and spring. Although Lake Glenmaggie regularly spills, these flows are now less common as they are harvested by the storage. A notable impact of irrigation and water harvesting is reversed seasonality of flows between Lake Glenmaggie and Maffra Weir, where summer flows are higher than natural due to the delivery of irrigation water. Winter flows are lower-than-natural because a high proportion of the inflows are harvested. Downstream of Maffra Weir, most flows are diverted for irrigation in summer and autumn. The changed hydrology restricts fish migration, limits the growth and recruitment of in-stream and riparian plants and reduces the quality of in-stream habitat.

Maffra Weir is a major barrier to fish movement and environmental flows that target migratory fish objectives mainly focus on reach 2, which is downstream of the weir. All other objectives apply to both reaches 1 and 2.

Figure 2.4.1 The Macalister system

Recent conditions

The last two years have seen the Macalister River experience very different climatic conditions. 2015–16 was very dry, with average to below-average rainfall in winter and a dry summer. In contrast, 2016–17 had average to above-average rainfall throughout the winter and spring, followed by a dry summer. Irrigation demands over summer and autumn have been relatively high. Environmental water deliveries over the last two years have mainly been used to provide autumn freshes to trigger Australian grayling spawning, winter freshes for migration and spawning of Australian bass and tupong, and low flows to provide connectivity between habitats for fish movement.

High rainfall in winter and spring 2016 resulted in Lake Glenmaggie spilling from July to November. The river experienced two bankfull flows in this period, the first bankfull flows in the Macalister River since 2012. These events help to disturb and reset dominant riparian vegetation. The floods also inundated some floodplain habitats, which provided food and breeding opportunities for turtles, frogs and some waterbirds.

All planned environmental watering events for 2016–17 were achieved, either through managed delivery of environmental water or through spill releases from Lake Glenmaggie.

Scope of environmental watering

Table 2.4.1 shows potential environmental watering actions and their environmental objectives.

Table 2.4.1 Potential environmental watering actions and objectives for the Macalister system

Potential environmental watering	Environmental objectives
Macalister River reaches 1 and 2	
Autumn/winter low flows (90 ML/day in May–July)	• Provide habitat for waterbugs • Provide passage for fish to undertake localised movements • Maintain water quality in pools and connectivity for fish, platypus and water rats • Maintain areas of slow-moving water for submerged aquatic vegetation
Spring fresh (1,500 ML/day for 3 days in September–October)	• Trigger upstream migration and recruitment for juvenile fish • Trigger upstream migration for lampreys and eels • Provide variability in water levels and wet the fringing woody vegetation • Scour sediment exposing fresh habitat areas • Provide food and habitat for waterbugs
Macalister River reach 2	
Autumn fresh (350 ML/day for 4–5 days in April–May)	• Trigger downstream migration and spawning of Australian grayling
Winter fresh (700 ML/day for 4–5 days in June–August)	• Trigger downstream migration and spawning of tupong and Australian bass
Spring/summer fresh (700 ML/day for 5 days in September–December)	• Trigger upstream migration and recruitment for juvenile fish • Trigger upstream migration for adult lampreys and eels
Summer/autumn fresh (140 ML/day for 3 days in December–May)	• Provide sufficient depth to allow fish to move throughout the reach • Flush pools to maintain water quality for waterbugs

Scenario planning

Table 2.4.2 outlines the potential environmental watering and expected water use under a range of planning scenarios.

The highest-priority use of environmental water in 2017–18 will be to provide flows that trigger migration, spawning and recruitment of native migratory fish species. These flows will specifically target Australian grayling, Australian bass and tupong, which all need to move between freshwater and the sea to complete their life cycles.

In a drought scenario, an autumn fresh will be provided for Australian grayling and a winter fresh will be provided for tupong and Australian bass. The VEWH expects enough environmental water will be available to provide autumn and winter low flows and a summer fresh if needed to improve water quality and allow fish to move between habitats in the river. Autumn flows remain a high priority when conditions are dry because these are the most impacted flows in reach 2, where most water is diverted for irrigation.

If extra environmental water is available under dry and average scenarios, it will be used to deliver spring freshes, to provide recruitment opportunities for juvenile Australian grayling, tupong and eels and adult short-headed lampreys to migrate upstream from estuarine and marine habitats. Under wet conditions, environmental water may be used to extend the duration and/or magnitude of managed flow events to optimise ecological outcomes.

Carrying over some water into July 2018 is a high priority under all scenarios to ensure there is sufficient water to maintain low flows through reaches 1 and 2 outside the irrigation season and to continue the winter fresh through to the next year if required.

Table 2.4.2 Potential environmental watering for the Macalister system under a range of planning scenarios

Planning scenario	Drought	Dry	Average	Wet
Expected river conditions	• No unregulated flows • Passing flows at Maffra Weir reduced	• Possible spills from Lake Glenmaggie in spring, minor flood levels may occur • Passing flows at Maffra Weir may be reduced	• Regular spills from Lake Glenmaggie in spring, minor to moderate flood levels may occur	• Large and frequent spills from Lake Glenmaggie, moderate to major flood levels may occur
Expected availability of environmental water	• 13,100 ML	• 16,400 ML	• 18,400 ML	• 22,900 ML
Potential environmental watering – tier 1 (high priorities)	• 1 autumn fresh • 1 winter fresh • Autumn/winter low flow • 1 summer fresh	• 1 autumn fresh • 1 winter fresh • Autumn/winter low flow • 1 summer fresh • 1 spring fresh	• 1 autumn fresh • 1 winter fresh • Autumn/winter low flow • 1 summer fresh • 1 spring fresh	• 1 autumn fresh • 1 winter fresh • Autumn/winter low flow • 1 spring fresh
Potential environmental watering – tier 2 (lower priorities)[1]	• 1 spring fresh	• N/A	• Increase magnitude of spring fresh	• N/A
Possible volume of environmental water required to meet objectives[2]	• 9,800 ML (tier 1) • 3,400 ML (tier 2)	• 13,300 ML (tier 1)	• 15,200 ML (tier 1) • 6,600 ML (tier 2)	• 19,800 ML (tier 1)
Priority carryover requirements	• 3,100 to 3,200 ML			

1 *Tier 2 actions are lower-priority actions to be considered if water is available.*

2 *Environmental water requirements for tier 2 actions are additional to tier 1 requirements.*

Orange threadtail damselfly at Bellbird Corner, Macalister River, by Duncan Fraser

Risk management

In preparing its seasonal watering proposal, West Gippsland CMA considered and assessed the risks of environmental watering and identified mitigation strategies. Program partners continually reassess risks and mitigation actions throughout the water year (see section 1.3.6).

Engagement

Table 2.4.3 shows the partners and stakeholder organisations with which West Gippsland CMA engaged when preparing the Macalister system seasonal watering proposal.

Seasonal watering proposals are informed by longer-term regional catchment strategies and regional waterway strategies and by environmental flow studies, water management plans and other studies. The strategies incorporate a range of environmental, cultural, social and economic perspectives and longer-term integrated catchment and waterway management objectives. For further details, refer to the West Gippsland Regional Catchment Strategy and West Gippsland Waterway Strategy.

Table 2.4.3 Partners and stakeholders engaged in developing the Macalister system seasonal watering proposal

Partner and stakeholder engagement
• VRFish
• Environment Victoria
• Maffra & Districts Landcare Network
• Native Fish Australia
• Macalister Irrigation District irrigators and diverters
• Gurnaikurnai Land and Waters Aboriginal Corporation
• Wellington Shire Council
• Southern Rural Water
• VEWH
• Gippsland Water

2.5 Snowy system

Waterway managers – New South Wales Department of Primary Industries (Water) and East Gippsland CMA

Storage manager – Snowy Hydro Limited

Environmental water holder – Victorian Environmental Water Holder and New South Wales Department of Primary Industries (Water)

The Snowy River originates on the slopes of Mount Kosciuszko. It drains the eastern slopes of the Snowy Mountains in NSW before flowing through the Snowy River National Park in Victoria and emptying into Bass Strait.

Environmental values

Construction and operation of the Snowy Mountains Hydro-electric Scheme has previously diverted 99 percent of the Snowy River's mean annual natural flow at Jindabyne, which has caused changes to the structure and function of the river, reduced the opening of the Snowy River entrance to Bass Strait and resulted in a decline in environmental values.

Despite the reduction in flows, the Snowy River supports many environmental values. The upper reaches and tributaries of the Snowy River contain freshwater species such as river blackfish and Australian grayling). The lower reaches support species such as estuary perch and Australian bass that move between saltwater and freshwater systems. The estuary contains estuarine and saltwater species such as flathead, mulloway and black bream. The floodplain wetlands of the Snowy River near Marlo provide feeding and breeding areas for wetland and migratory birds.

Social, cultural and economic values

The Snowy Mountains Hydro-electric Scheme provides substantial economic value as a major generator of renewable electricity, and Snowy water supports irrigated agriculture in NSW and Victoria. The Snowy River and its estuary are a drawcard for the many tourists who enjoy camping, boating, swimming and recreational fishing.

The waterways of the Snowy system including the Snowy River hold significance for Traditional Owners in the region include the Monaro-Ngarigo, Bidwell Maap, Southern Monaro (Monaro-Ngarigo / Yuin / Bolga), Wongalu and Wiradjuri peoples. In recognition of the Traditional Owners, five high-flow releases in 2017–18 have been named:

- Djuran (running water)
- Waawii (water spirit)
- Billa Bidgee Kaap (big water season)
- Wai–Garl (river blackfish)
- Bundrea Nooruun Bundbararn (waterhole big lizard).

The Snowy River is also an iconic and culturally significant Australian river made famous by Banjo Patterson's poem *The Man from Snowy River*.

System overview

There are four major dams and multiple diversion weirs in the upper Snowy River catchment that divert water to the Murrumbidgee and River Murray valleys. Downstream, the hydrological effects of the Snowy Scheme are substantial, but are partly alleviated by the contribution of flows from tributaries (such as the Delegate River in NSW and the Buchan River in Victoria).

The Victorian, NSW and Commonwealth governments have recovered water to help restore damage done by decades of limited flow. Victorian environmental water available for use in the Snowy system is held in the Murray, Goulburn and Loddon systems. This water is made available for environmental flows in the Snowy River via a substitution method, whereby Victorian environmental water replaces water that was earmarked for transfer from the Snowy to Victoria to support irrigation needs.

Recent conditions

In the 2016–17 water year, 132,300 ML of environmental water was released to the Snowy River. Two east-coast low-pressure systems in June and July 2016 brought substantial rainfall to the Snowy River catchment and both events coincided with planned high-flow environmental releases. Both releases were rescheduled to avoid increasing floods in Victoria. The undelivered environmental water was accrued and used for a high-flow event in early summer.

In combination there were six high-flow events that delivered over 54,000 ML to the Snowy River in winter, spring and early summer. These flows helped maintain the opening of the Snowy River estuary at Marlo and reduce salinity in the upper reaches of the estuary.

Figure 2.5.1 The Snowy system

Scope of environmental watering

Environmental water releases from May 2017 to April 2018 aim to mimic the typical flow pattern of a mixed snowmelt/rainfall river system characteristic of the Snowy Mountains. The releases aim to support ecological processes in the Snowy River below Jindabyne Dam and maintain a healthy river that is much smaller than the natural channel before river regulation.

The planned environmental flows do not have direct biodiversity objectives. Their main aim is to restore physical and ecological processes that support aquatic habitats, productivity, dispersal, reproduction and recruitment. It is assumed that these processes will contribute to biodiversity outcomes in the years ahead.

Five peak flows are scheduled in winter/spring 2017. A large, flushing flow is scheduled for early October 2017 and includes an eight-hour peak, equivalent to 13,000 ML/day. Other peak flows will mimic winter rainfall events. These peak flows aim to improve the physical attributes of the river by scouring and depositing sediment and limiting the growth of riparian plants within the channel.

High flows are sustained from July–December to help mix water in the estuary for the benefit of plants and fish (such as Australian bass). Low flows will then be released until the end of the water year in April 2018.

The total volume planned for release in 2017–18 (including contributions from water savings in Victoria and NSW) is 218,500 ML.

Risk management

When weather conditions result in an increased risk of flooding, the NSW Department of Primary Industries (Water) works with the NSW State Emergency Service, the Bureau of Meteorology, East Gippsland CMA and the VEWH to provide information to the community about the management of planned releases. Releases may be cancelled or rescheduled to limit impacts to private land.

Engagement

NSW Department of Primary Industries is responsible for planning environmental flow releases in the Snowy River, and it consults East Gippsland CMA and the Victorian and Australian governments about the releases.

Aerial view of the Snowy River near the NSW-Vic border, by Liz Brown