

# Why is environmental watering important?



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It creates refuges for water-dependent species during drought.

- Kate Bennetts, ecologist

It improves river health which sustains our Country and our continued connection.

- Darren Perry, Ngintait Traditional Owner

It can be very important for the breeding of fish. I have a long family history of fishing.

- Steven Threlfall, angler

It provides some open water areas in a dry landscape and makes the wildlife come back again.

- David Falla, landholder in Litchfield

## Rivers and wetlands are Victoria's lifeblood, so we need to protect them

Healthy rivers and wetlands support vibrant and healthy communities. They sustain people by supplying water for towns, farms and businesses and contributing to local economies through industries such as agriculture, fishing, real estate and tourism. Healthy rivers and wetlands make cities and towns more liveable and contribute to the physical and mental wellbeing of individuals and communities. They provide places for people to play, relax and connect with nature, and sustain Indigenous communities who have a continuing connection to Country.

Rivers and wetlands cannot sustainably provide these benefits unless their ecological health is protected and maintained. **Environmental watering is a crucial tool to achieve this.**



Canoeing on the Snowy River, by Rex Candy



Enjoying the Wimmera River at Dimboola, by Wimmera CMA



Barapa Barapa elder Aunty Esther Kirby in Gunbower Forest, by Sally Jarvis

Figure 1. Before and after the development of dams, weirs and channels



## Victoria's native plants and animals have evolved around rivers and wetlands

Victoria's native plants and animals have evolved around the complex and interconnected features of river and wetland systems. The way water flows through the landscape (through rivers, into wetlands and across floodplains) is one of the many features that contributes to the health of native plants and animals and the ecosystem functions that support them.

Before the development of dams, weirs and channels, water readily flowed through the landscape dispersing sediment and nutrients that underpin aquatic food webs. This provided rich soil for plant growth, and food and habitat for fish species (such as Murray cod and golden perch), mammals (such as platypuses), and birds (such as brolgas and royal spoonbills).

## The way water flows through the landscape has changed

River and wetland systems also provide water and land that is important to towns, industry and modern agriculture. As a result, many of Victoria's river and wetland systems have become highly modified and now operate in a way that is significantly changed from natural conditions. For example, instead of water flowing via natural pathways through the landscape, water is captured in storages by dams and weirs, diverted via pipelines, levies and man-made channels, and used for towns, cities, industry and irrigation. This has interrupted many of the natural processes that support native plants and animals.

## River and wetland health has declined

Changes to river and wetland systems shown in Figure 1 have impacted rivers and wetlands and the native plants and animals that have evolved to depend on them.

In Victoria we have seen significant falls in:

- ▶ the abundance and distribution of almost all native fish, including the loss of three native freshwater fish species<sup>1</sup>
- ▶ the abundance of waterbirds; for example, Barmah-Millewa Forest, which was once the 'largest known egret rookery in Victoria' did not host a successful egret breeding event for the 30 years to 2010<sup>2</sup>
- ▶ the abundance of native vegetation; for example, large areas of river red gum forest are under severe stress as a result of less frequent flooding<sup>3</sup>

Declines in river and wetland health can also impact communities. For example, poor water quality can impact water supply for towns, cities, industry and irrigation and impact opportunities for tourism. It can result in higher health risks and higher costs for water treatment. Poor water quality and reduced river flows can also reduce recreational fishing opportunities (by impacting fish abundance), with potential flow-on effects for local economies.

## Environmental watering can help to reverse the decline in river and wetland health.

<sup>1</sup> Department of Sustainability and Environment, *Advisory List of threatened vertebrate fauna in Victoria*, 2013

<sup>2</sup> Kingsford, R., Lau, J., O'Connor, J., *Birds of the Murray-Darling Basin*, May 2014

<sup>3</sup> Victorian Environmental Assessment Council, *River Red Gum Forests Investigation – Final Report*, July 2008



Goulburn weir at Nagambie, by Jim Castles

## Environmental watering can help to improve the health of rivers and wetlands and protect environmental values

### Rivers

In rivers, environmental water is often delivered to mimic some of the flows that would have occurred naturally, before the construction of dams, weirs and channels. This is vital for maintaining the physical, chemical and biological health of rivers.

Environmental water managers generally focus on returning some of the small and medium-sized river flows that are critical in the life cycles of various native plants and animals. These flows can move sediment and nutrients through river systems, connect habitats and improve water quality.

The timing, duration and volume of water delivery is designed to support the native plants and animals that rely on those flows. For example, fish such as the Australian grayling rely on an increase in river flow in autumn to signal them to migrate downstream for spawning.

### Wetlands

Many wetlands are now either disconnected from the rivers that used to naturally fill them or are permanently connected to rivers or channels. This means that some wetlands do not get enough water, and others get too much.

In wetlands, environmental water managers focus on mimicking the natural wetland wetting and drying cycles that so many plants and animals have evolved to depend on for their diversity and long-term resilience. For example, where wetlands and floodplains have been cut off from natural river flows, environmental water can be used to reconnect these areas, sometimes via irrigation infrastructure such as pumps, channels and regulators.

For more information about the benefits of different types of environmental flows in rivers and wetting and drying phases in wetlands, see the *What does environmental watering aim to achieve?* fact sheet.

### Complementary actions

Rivers and wetlands require more than just water to be healthy. Other factors, such as the type and extent of vegetation, regional climate, pest plants and animals, land use and landholder behaviour, can also influence river and wetland health.

Environmental watering is only one of the tools required to maintain and improve river and wetland health. Complementary actions are crucial. Such actions may include fencing and revegetation, erosion control, pest control, returning logs to rivers for fish and bug habitat, and installation of fishways to allow fish to pass through dams and weirs.



Barwon River at Fyansford, by Saul Vermeeren



Australian grayling, by Wayne Koster



Long-necked turtle at Little Rushy Swamp, by Keith Ward