

Water for the environment

How is water shared between towns, farms and rivers?



Towns, farms, rivers and wetlands – they all need water.

Dams and weirs provide a more reliable water supply for people and industries, but river regulation has changed the natural cycle of wetting and drying that sustains the health of the river itself.

To restore some of the balance, a variety of formal mechanisms have been introduced to share the available water between all stakeholders including the environment.

The term ‘environmental water’ is used to describe water that is set aside specifically to support the health of rivers and wetlands.

Policies and plans which aim to ensure a healthy, productive river system now and into the future support river management.

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Finding the balance

Native plants and animals have evolved over thousands of years to survive and thrive through the boom and bust nature of Australia’s river systems.

River regulation has brought rapid change. Water that once flowed freely across the floodplain is now diverted through channels and pipes. Overbank flows that once deposited nutrient-rich sediments across the floodplain are now contained within levees or captured in storages and dams. Natural wetlands and creeks have become isolated from water sources and no longer receive the volumes of water they used to.

Native fish, frogs, birds and plants that relied on natural flows to survive must now deal with greatly changed flow patterns and less water.



In an effort to balance the effect of these changes, communities and governments have set aside parcels of water dedicated to improving river and wetland health.

Types of water in our rivers and dams

In each river catchment, a Water Sharing Plan (WSP) sets out the rules for access and use of all available water.

There are two main types of water for the environment in a WSP — licensed water and planned environmental water.

Understanding licensed water

‘Licensed’ water is also known as ‘held’ water.

It is access to a parcel of water held on a licence, the same as licenses held by irrigators and other users.

The use of this water is subject to the same fees, access charges and reliability considerations (seasonal availability and allocation announcements) as those applied to other licence holders.

Licensed water may be classified as general security, high security or supplementary based on the reliability of water and how a licence holder can access it. Ultimately, access depends on how much water is held in dams and the seasonal conditions—dry or wet.

High security licences provide more certainty for licence holders. Farmers with permanent plantings (such as fruit trees) may opt for a high security licence to increase the reliability of their water supply. A landholder with a seasonal cropping operation (such as wheat or rice) may choose a general or supplementary classification of licence according to their needs and the likely effect of seasonal conditions.

Across New South Wales, the state and Commonwealth governments hold a combination of mostly general security and supplementary water licences with a small volume of high security licences.

This water can be released into the river or delivered to specific sites like wetlands to achieve outcomes for native fish, waterbirds and other plants and animals.

Understanding planned water

‘Planned’ water for the environment is also known as ‘rules-based’ water.

Planned water is set aside through WSPs. The rules in these plans protect specific volumes and flows to achieve environmental outcomes.

Most planned water for the environment is ‘non-discretionary’, which means it is automatically scheduled for release from a water storage, or protected from extraction, when the WSP rules are met. Some planned water for the environment is ‘discretionary’ which means it can be ordered for use by environmental water managers.

One example of non-discretionary environmental water is a ‘translucent flow’ release from a dam or weir. This is a release of water triggered when inflows into the catchment are high (like during a large rainfall event). It is calculated as a percentage of the incoming water and is released from a dam or weir for the benefit of the river environment.

The rules that control these releases replicate the natural pattern of flows within the river system. In some cases, once the water has been released from the dam and the purpose of the flow has been achieved, the remaining water can be extracted by consumptive users such as farms and industries further downstream.

An example of discretionary environmental water is an Environmental Water Allowance. This can be ordered (or called from a water storage) by an environmental water manager for a specific purpose. Management of this type of planned water is more flexible and water deliveries can be timed to achieve particular outcomes.

Carryover water

In some valleys in New South Wales, the owner of a water licence may choose to 'carry over' part of their stored available water for use in later years. The rules for how much water can be held and for how long vary between licence classifications and river systems.

The option to carry over water does not apply to all categories of licence.

Deciding whether to carry over water and how much is a complex decision which is not taken lightly. Some water may be carried over if forecast conditions are dry and rainfall is likely to be low. In very wet years, there may be widespread natural flooding and an environmental water manager may choose to carry over a proportion of available water for use in drier conditions.

Supplementary water

When a dam spills or rain causes inflow to a river downstream of a storage structure, the resulting water is known as an 'unregulated' flow. Some unregulated flow can be used to meet current water orders. Unregulated flow in excess of water orders or river operational needs may be classified as 'supplementary water'.

Some of this water may be extracted by supplementary licence holders during a period determined by the river operator.

Supplementary water can support environmental outcomes such as connecting low-lying wetlands with the river, providing fish passage and supporting the floodplain food web.

Water for the environment

Over the past two decades, the volume of water set aside for the environment has increased due to government-funded water efficiency and water purchase programs.

The volume of water allocated to rivers and wetlands has been based on finding a balance between environmental needs and socio-economic outcomes.

The evolution of 'water for the environment' has been driven by communities and supported by successive state and federal governments.

Different volumes exist in each valley and are subject to the announced allocation for the various licence types or planned allocations.

The volume of licenced water held by the NSW Government can be found at www.environment.nsw.gov.au/topics/water/water-for-the-environment/about-water-for-the-environment/current-water-holdings

Current volumes of held and planned water for the environment can be found at www.waternsw.com.au/supply/regional-nsw/operations

The volume of water held by the Commonwealth is found on their website at www.environment.gov.au/water/cewo/about/water-holdings

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Above left to right: Willara River Crossing, Paroo River, T. Cooke; Macquarie Marshes, J.Spencer/DPIE; Jamie Richmond Bridge, Bokhara River, T.Cooke.

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