The Commonwealth Environmental Water Holder acknowledges Australia's traditional owners and respects their continued connection to water, land and community. We pay our respects to them and their cultures and to their elders both past and present.

T: 1800 803 772
E: ewater@environment.gov.au
W: www.environment.gov.au/water/cewo

@theCEWH

Postal address:
GPO Box 787, Canberra ACT 2601

Australian Government

Commonwealth Environmental Water Office

RESTORING AND PROTECTING THE

NAMOI RIVER VALLEY

2017–18 SNAPSHOT

Above: Namoi River downstream of Keepit Dam with eWater
Cover: Peel River
Back cover: Juvenile Heron

All images by Commonwealth Environmental Water Office unless noted otherwise.

We use environmental water to improve the health of our rivers, floodplains and wetlands

Throughout the Murray–Darling Basin, we deliver water to key locations to support the health of waterways and the many unique native animals, plants, birds and fish that depend on them to survive and thrive.

The Namoi River Valley contains diverse and rich natural environments that support domestic water use, agriculture, and Aboriginal cultural values and practices, as well as tourism and recreational activities.

The Namoi and Peel River catchments are within the traditional lands of the Gomeroi/Kamilaroi people. These first peoples have an ongoing connection to the Namoi River Valley. For example, golden perch (yellow belly), a fish found in the Namoi River, was traditionally fed to sick people to improve their health.

The Namoi catchment covers around 4 per cent of the Murray–Darling Basin and uses around 2.6 per cent of all surface water and 15.2 per cent of groundwater in the Basin (excluding the confined aquifers of the Great Artesian Basin). The amount of groundwater extraction in the Namoi River Valley is one of the highest of any Basin catchment.

Both sources of water are equally important to the region—for towns, stock, domestic use and irrigation.

The Namoi region is famous for being one of the richest agricultural areas in Australia. This fertile country grows crops (both dryland and irrigated) of cotton, wheat, barley, oilseeds and a variety of others, from grapes to peanuts.

While only a small area of the catchment (about 3 per cent) is irrigated, it contributes significantly to the regional economy. Grain crops, cereals, oilseed and legumes are grown under irrigation, in rotation with cotton. Lucerne production for hay is significant, especially around Tamworth. Cattle and sheep grazing is also a large industry in the catchment.

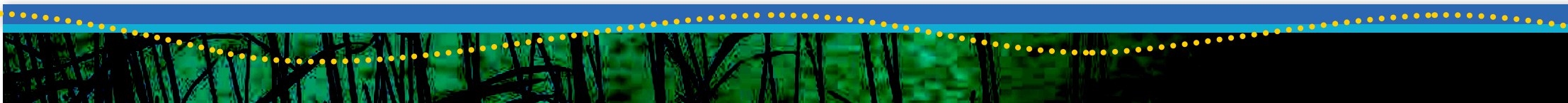
There are numerous native species in the Namoi River Valley. Many are protected under state and federal legislation, including 28 threatened plant species and 66 threatened fauna species—four amphibians, nine bats, 37 birds, 11 mammals and five reptiles.

The region is also home to many ecologically important aquatic habitats. These include:

- species protected under Australian or New South Wales legislation, including silver perch, Australasian bittern, Australian bustard, black-tailed godwit, Bell's turtle and brolga; and a variety of plants including coolabah, river red gum and river cooba
- large areas of anabranch and billabong wetlands downstream of Narrabri
- six vegetation communities, including carbeen open forest and bimble box woodland.

The delivery of water for environmental purposes improves connections between rivers, floodplains and wetlands, particularly at sites that support nationally threatened species and communities listed under the *Environment Protection and Biodiversity Conservation Act 1999* and state legislation, and wetlands of national significance.

The Commonwealth Environmental Water Office designs environmental flows in partnership with state and local delivery partners to improve connections between rivers, floodplains and wetlands. In particular, water delivery may target sites that support nationally listed threatened species under the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*, state-listed threatened species and communities under the *Threatened Species Conservation Act 1995* (NSW) and endangered populations under the *Fisheries Management Act 1994 (NSW)*. These flows contribute to achieving environmental outcomes as outlined in the Basin-wide Environmental Watering Strategy—part of the implementation of the Murray–Darling Basin Plan.



Summary of longer term outcomes under the Basin-wide Environmental Watering Strategy

Maintain base river flows

Maintain the current species diversity and increase abundance of waterbirds by supporting breeding opportunities. In the Namoi River Valley, the use of water could contribute to an increase in the habitat and foraging opportunities for waterbirds but is unlikely to significantly contribute to large-scale bird breeding events.

Prevent loss of native fish species by supporting regular recruitment (for short-, medium- and long-lived species) and increased movement and distribution. Recruitment means the survival of a species through all life stages and into the next generation. Successful recruitment means that, over the long term, the population of the species spans all age groups. Regionally important sites for native fish include the Lower Namoi River (between Gunnedah and Walgett), the Upper Namoi River (upstream of Keepit Dam), and the Peel River (downstream of Chaffey Dam).

Maintain the extent of vegetation communities and prevent any further decline, particularly in or near the Namoi River.

Maintain the current extent of river red gum and black box communities, along with improvements to condition and greater likelihood of young tree survival. These ecological communities provide essential food and habitat for many native animals across the Basin and are culturally significant to local Aboriginal people.

Supplying water for the environment

The Commonwealth Environmental Water Holder delivers water to improve river flows needed to restore and protect river systems throughout the Murray–Darling Basin.

Across the Basin, this water is used to supplement flow events, provide flows for fish movement and spawning, and support the health of aquatic ecosystems.

Depending on river operating rules, flow constraints and climatic conditions, the Commonwealth Environmental Water Holder can decide to:

- use water to meet identified environmental demands
- hold on to the water and carry it over for use in the next year (`carryover')
- trade (buy or sell water) for equal or greater environmental benefit.

Walgett town weir with waterbirds

Our partners

The best approaches to managing water for the environment involve local knowledge and the latest science.

Commonwealth environmental watering is planned, delivered and managed in partnership with people and organisations in the Namoi River Valley. Partner organisations include:

- the New South Wales Office of Environment and Heritage
- the New South Wales Department of Primary Industries
- WaterNSW
- the Murray–Darling Basin Authority.

The Commonwealth Environmental Water Office regularly attends community forums, events and committees in the catchment. We continue to forge local partnerships to ensure that community groups, including Aboriginal traditional owners, have the opportunity to help shape the regional planning and management of our delivery of water for the environment over the long term.

To learn more about our work or offer suggestions for the use of environmental water in the Namoi River Valley, please contact your local engagement officer on 0437 141 495 or email ewater@environment.gov.au

Water for the Namoi River Valley environment to date

Environmental demand and water availability influence the use and management of environmental water. This water can be used for many reasons, ranging from avoiding environmental damage to improving ecological health, depending on how much water is available and the environmental needs of the system.

2016–17

During this period, 7,852 ML of water was used for environmental outcomes in the Lower Namoi River. This water resulted in a more gradual drop in river levels as other water deliveries receded and provided flows for native fish, including silver perch.

Silver perch were once common in the Namoi River Valley but are now listed as critically endangered. Efforts are being made to re-establish a sustainable population of them in the Namoi and Peel rivers. In April 2017 the New South Wales Department of Primary Industries undertook a conservation stocking of 50,000 silver perch fingerlings between Gunnedah and Narrabri. Environmental water, in conjunction with natural flows from the Peel River, helped maintain flows at Gunnedah to promote the survival of the young fish. Environmental water also provided connectivity along the length of the Namoi River as far as Walgett. This enabled fish to move between the Barwon and Namoi catchments, which helped with the survival of native fish that bred in the Barwon River in the spring floods in 2016.

Following on from these Namoi River flows, 1,257 ML of Commonwealth environmental water was delivered in the Peel River in conjunction with the New South Wales Peel River environmental contingency allowance. The ecological objectives of this flow were to:

- return (mimic) the autumn/winter flows that occurred before Chaffey Dam was built (restore flow variability)
- increase the food supply for native fish by 'flushing' nutrients off the low in-channel sediment bars
- redress, in part, the inflow captured in Chaffey Dam in 2016 as the dam reached its new full supply level
- provide the opportunity for silver perch and other native fish to move upstream into the higher reaches of the Peel River, and maintain flows to support juvenile native fish.

2013–2016

The dry conditions from 2013 to 2016 contributed to ecological damage resulting in a high environmental demand for low to medium flows to support recovery. Rainfall in 2016 provided much-needed flows and connection along the Namoi River, and between the Namoi River and the Barwon River.

2012–2013

At the end of January 2013, rainfall in the Mooki and Coxs Creek sub-catchments created a good flow of water in the Namoi River. In response to this, 7,728 ML of environmental water was delivered to increase the duration of in-stream habitat and support native fish by improving opportunities for them to feed, breed and shelter. This water provided benefits along the length of the Lower Namoi River and provided fish passage into the Barwon River, with an estimated 6,500 ML reaching the Barwon River.

Keepit Dam

NAMOI RIVER VALLEY

Australian Government
Commonwealth Environmental Water Office

The Namoi River Valley catchment in northern New South Wales stretches westward from the Great Dividing Range to the floodplains of the north-west.

The catchment is diverse in climate and landscape, ranging from cool, high-rainfall areas in rugged terrain in the east to semi-arid, low-rainfall areas on extensive riverine plains in the west.

Water for the environment helps to protect and restore important environmental assets in the Namoi River Valley.

Planning for the best use of Commonwealth environmental water to achieve healthy river systems and species must take into account the amount of water available and the demand for this water. The water available includes the yearly allocations, carryover and other water deliveries, and is affected by how dry or a wet year). The environmental demand is how urgently some parts of the system require water to maintain ecological health, and is affected by how dry or wet it was in past years.

Like all water managers, the Commonwealth Environmental Water Holder must consider variable seasonal conditions.

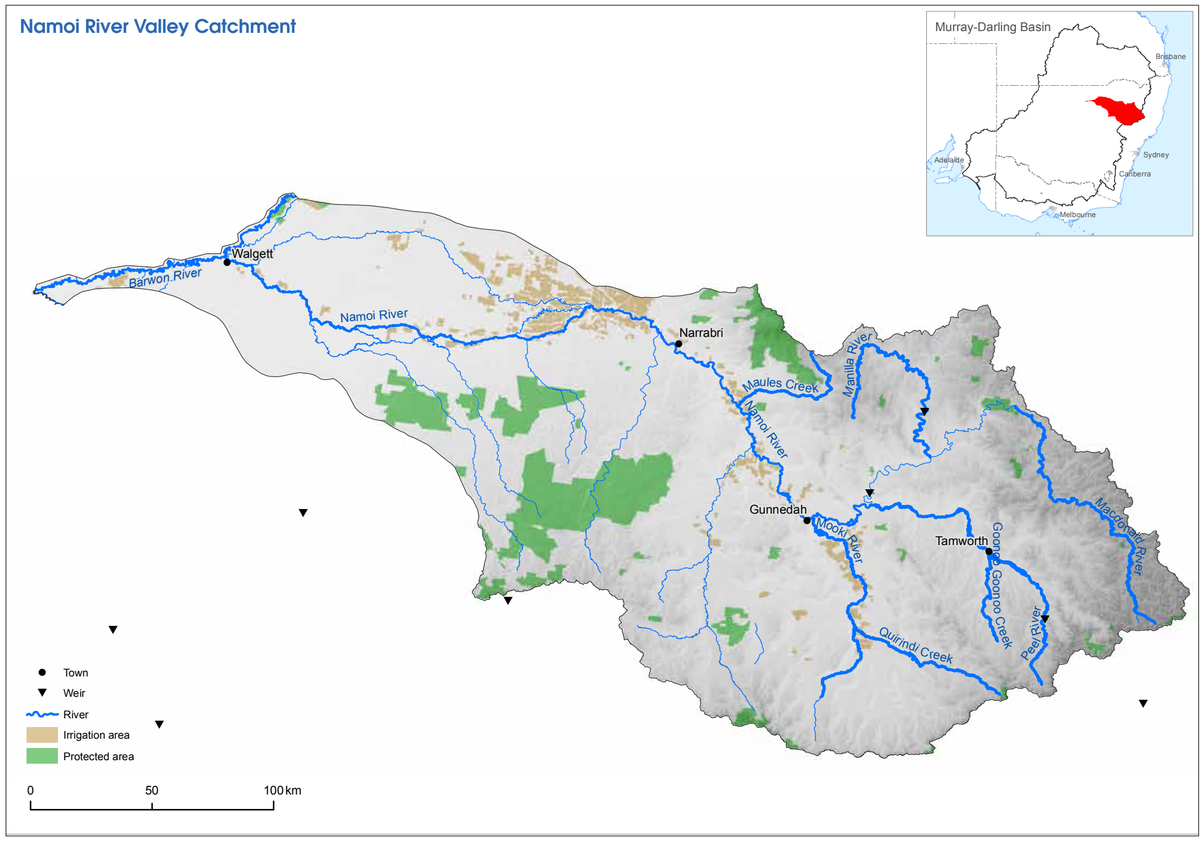
When considering the availability of water to meet environmental demands, it is important to factor in unregulated flows and the water resources managed by other entities to achieve environmental outcomes. This includes planned environmental water such as end-of-system flows and the New South Wales Government's Peel environmental contingency allowance.

Planned environmental water is water that is left in the river to support a healthy river system. Two examples of planned water include water left in the river once the cap (maximum limit) on the extraction amount for consumptive use has been reached, and water that maintains a minimum flow in the Namoi River at Walgett during winter time.

An unregulated flow is when the river flow does not come from a controlled release of water from a dam or weir (government owned or operated water storages). Rather, the river flow reflects rainfall and run-off from unregulated catchment areas flowing unimpeded through the system.

Regulated flow is a river flow released from a dam or storage that has been 'ordered' by a customer who holds a water entitlement.

Namoi River Valley Catchment



Responding to environmental demands in 2017–18

The use of Commonwealth environmental water in the Namoi River Valley is foremost to support freshwater ecology, including silver perch, increase connection between pools in the Lower Namoi River, and improve connection between the fish populations in the Namoi and Barwon rivers.

The priorities for Commonwealth environmental water in the Namoi River Valley in 2017–18 are:

Lower Namoi River channel: Providing water to contribute to habitat maintenance, connectivity, fish movement (dispersal) and spawning. This action aims to improve ecological condition and to help native fish populations to recover.

Peel River channel: Using water to contribute to base flows and in-channel freshes in conjunction with other flows. A fresh is an increase in a river's water levels beyond the base flow. It does not fill the river or go over the bank. The base flow is the minimum amount of water needed to maintain river flow.

Wetlands/anabranches: Providing water to the Lower Namoi River to improve connection in parts of the river system and support native fish spawning and movement. This watering action requires water availability, a river flow event and appropriate conditions (water temperature, rate of water movement and season).

For more information on our planning process, see the 2017–18 Portfolio Management Plan for the Namoi River Valley at www.environment.gov.au/water/cewo/publications

Working together to improve river health and fish habitat

The Namoi Fish Demonstration Reach, established in 2007, is an example of successful collaboration between catchment managers, community groups, Aboriginal groups, recreational fishers, landholders, and the New South Wales and Australian governments. This project has improved river health and fish habitat along a 150 km reach of the Namoi River between Gunnedah and Narrabri.

In 2016 and again in 2017 the New South Wales Department of Primary Industries placed conservation stocks of 50,000 silver perch fingerlings into the demonstration reach between Gunnedah and Narrabri. This is part of a five-year program to restock silver perch to help create new populations in their former range, and will be monitored for the Basin Plan ecological outcomes. Commonwealth environmental water was provided to support the survival of these fingerlings by ensuring a minimum flow at Gunnedah for several months after the fish were stocked in 2017. Water deliveries later in 2017 will help sustain these fish.

Commonwealth environmental water in 2016-17

Approximately **16.8GL** of Commonwealth environmental water has been used in the Namoi River Valley **since 2013**.

Commonwealth environmental water allocations were **10,785 ML** Namoi River and **1,257 ML** Peel River in **2016-17**.

12,042 ML

12,404 ML

Commonwealth environmental water entitlements were **105 ML** Upper Namoi, **11,042 ML** Lower Namoi, **1,257 ML** Peel River

9,109 ML

In **2016-17**, **9,109 ML** of Commonwealth environmental water was used in the Namoi River Valley (**7,852 ML** in the Namoi River and **1,257 ML** in the Peel River).

9,160 ML

9,160 ML was carried over into **2017–18** in the Namoi River. Water cannot be carried over between years in the Peel River.

ML = megalitre = 1 million litres GL = gigalitre = 1000 megalitres

Water entitlements and water allocations

A water entitlement is a permanent water holding for a set amount of water (100 ML, for example). It can be thought of in much the same way as owning a piece of land (in that you can also buy more or sell some).

A water allocation is a percentage of water that can be used against your entitlement as annually determined by the state government (and reviewed if water availability changes).

Both water entitlements and water allocations can be traded on the water market.

To learn more, visit www.nationalwatermarket.gov.au