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.

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Australian Government

Commonwealth Environmental Water Office

RESTORING AND PROTECTING THE

NAMOI RIVER VALLEY

2016–17

Above: The Murray cod is a Gomeroi family totem
Photo: Murray-Darling Basin Authority
Cover: Namoi catchment
Back cover: Lower Namoi River near Gunnadah

All images by Commonwealth Environmental Water Office unless noted otherwise.

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Environmental water is dedicated to improving the health of our rivers, floodplains and wetlands

Throughout the Basin, environmental water is delivered 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, Aboriginal cultural values and practices as well as tourism and recreational activities.

Black-tailed Godwit. Photo: Department of the Environment

The Namoi and Peel River catchments are within the traditional lands of the Gomeroi/ Kamilaroi people. The Gomeroi is a large nation which extends from around Singleton in the Hunter Valley through to the Warrumbungle Mountains in the west, and up through the Namoi and Gwydir valleys to just over the Queensland border.

The Namoi River Valley 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). Groundwater extraction in the Namoi is one of the highest for any Basin catchment. Both sources of water—used for towns, stock, domestic use and irrigation—are equally important to the region.

Agriculture is a significant employer in the rural areas of the catchment and the region is home to one of the richest agricultural areas in Australia, with fertile country supporting rich crops (both dryland and irrigated) of cotton, wheat, barley, oilseeds, and a variety of others from grapes to peanuts.

While irrigation occupies a small area of the catchment (about 3 per cent) 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 agricultural industry in the catchment.

Numerous species are supported within the region, protected under state and federal legislation including 28 threatened plant species; and 66 threatened fauna species that include four species of amphibians, nine bats, 37 birds, 11 mammals and five reptiles.

The region is also home to a wide range of aquatic habitats of ecological importance, including;

- large areas of anabranch and billabong wetlands downstream of Narrabri
- endangered ecological communities
- 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
- six vegetation communities including Carbeen Open Forest and bimble box woodland.

Commonwealth environmental water improves connections between rivers, floodplains and wetlands, particularly to those sites that support nationally threatened species and communities listed under the *Environmental Protection and Biodiversity Conservation Act 1999*, state-based legislation and wetlands of national significance.

Commonwealth environmental water supply

The water acquired by the Commonwealth Environmental Water Holder through Australian Government investment in more efficient irrigation infrastructure, and other measures, assists with providing some of the river flows needed to restore and protect river systems throughout the Basin's irrigation districts.

Across the Basin this water is often used to supplement rainfall events as well as conveyance and consumptive water flows.

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

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

Conveyance water is an additional amount of water that is added to a water delivery to cover the calculated losses that occur during transit (eg. run off or evaporation).

Consumptive water is water used for household purposes, stock and for on-farm use like irrigation.

Environmental water use in the Namoi River Valley to date

Environmental demand and water availability influence Commonwealth environmental water management. Environmental water can be used with the purpose of assisting to 'avoid damage' to the environment, through to 'improving' ecological health depending on how much water is available and the environmental needs of the system.

At the end of January 2013, rainfall in the Mooki and Cox's sub-catchments created a good flow of water in the Namoi River. In response to this 7,728 ML of Commonwealth 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. Commonwealth environmental water then flowed downstream providing benefits along the length of the Lower Namoi River, with an estimated 6,500 ML of the total amount released, reaching the Barwon River by the end of February. This environmental watering action was supported and developed with input from locally based ecologists, natural resource managers and river operators.

For the last few years, water availability was limited by low allocations. The overall purpose for managing the Commonwealth's environmental water portfolio in the Namoi River Valley was to avoid damage and protect assets in the Lower Namoi River channel, wetlands and anabranches, and the Peel River to ensure ecological capacity for recovery.

However with rainfall in 2016 there is increased scope to improve the health and resilience of aquatic ecosystems using a top up of Commonwealth environmental water within the Namoi River Valley.

Namoi catchment

Our partners

The best approaches to environmental water management involve local knowledge and the latest science.

Commonwealth environmental water is planned, delivered and managed in partnership with a number of people and organisations in the Namoi River Valley including:

- New South Wales Office of Environment and Heritage
- New South Wales Department of Primary Industries – Water
- New South Wales Department of Primary Industries – Fisheries
- WaterNSW
- North West Local Land Services
- Eco Logical Australia
- Namoi Customer Service Committee
- Murray-Darling Basin Authority

The Commonwealth Environmental Water Office regularly attends community forums, events and committees within the catchments and we are continuing to forge local partnerships that will allow community groups, including Aboriginal Traditional Owners, to help shape the regional planning and management of environmental water delivery over the long term.

Please contact your local engagement officer Adrian Clements in Dubbo NSW to learn more about our work or offer suggestions for the use of environmental water locally.

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Lower Namoi River between Gunnadah and Carol

Nesting brolga. Photo: Brian Furby Collection

Bell's turtle. Photo: Steve Wilson

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.

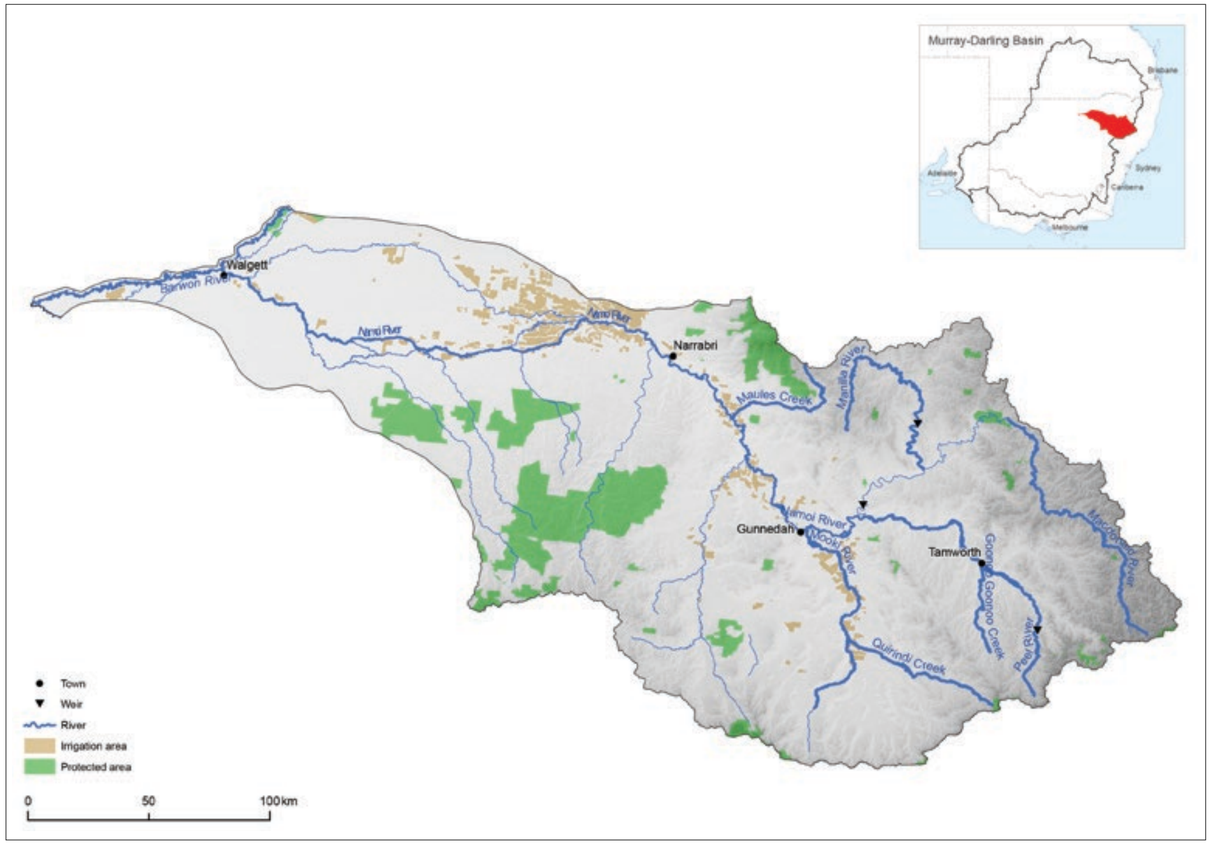
The catchment is diverse in climate and landscape, ranging from cool, high rainfall areas in rugged terrain in the east, to semi-arid, low rainfall areas on extensive riverine plains in the west.

Planning for the best use of Commonwealth environmental water to achieve healthy river systems and species must take into account; the water that is currently available and the climate conditions (eg. is it a dry or wet year); how urgently some parts of the system require water to maintain ecological health, and; different environmental watering scenarios based on the considerations above. Environmental water can help to protect and restore key environmental assets in the Namoi River Valley by managing water delivery to meet identified demands.

Like all water users, the Commonwealth Environmental Water Holder must consider variable seasonal conditions and manages its holdings in collaboration with other stakeholders. When considering the available water to meet environmental demands, it is necessary to also factor in the water resources managed by other entities and available to contribute to environmental outcomes. While Commonwealth environmental water is the only source of environmental water held in the Namoi River Valley, other water resources include planned environmental water (e.g. end of system flows), unregulated flows, conveyance water and consumptive water.

Planned environmental water in the Namoi River Valley is water that is left in the river for the sole purpose of benefiting the environment. Two types 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 leaving a minimum volume of water in the Namoi River at Walgett during winter time.


Chaffey Dam



Responding to environmental demands

The priority for the use of Commonwealth environmental water in the Namoi River Valley is to improve river flows, support freshwater ecology and replenish refuge pools in the Lower Namoi River if required during droughts.

The following priorities for the use of Commonwealth environmental water in the Namoi River Valley in 2016-17 are:

Lower Namoi River channel: When there is more water in the river, Commonwealth environmental water could contribute to habitat maintenance, connectivity, fish movement (dispersal) and spawning. These actions aim to avoid ecological damage and to improve the health of the river. This watering action requires river flows and the appropriate conditions to go ahead.

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

Another option is to maintain existing habitat and support fish movement and resilience. However, this option is dependent on additional flows into the river and may be delivered in conjunction with other flows released from Keepit Dam.

Peel River channel: Commonwealth environmental water could contribute to baseflows in most climatic conditions but can only contribute to in-channel freshes when a moderate to high amount of water is available.

Further information on planning for the use of Commonwealth environmental water is available in the 2016 17 Portfolio Management Plan for the Namoi River Valley at www.environment.gov.au/water/cewo/publications

A fresh event describes an increase in levels of the river beyond the base flow, but does not fill the river or go over the bank

A baseflow is the minimum amount of water that maintains river flow


Australian Bustard. Photo: Cathy Zwick

Working together to improve river health and fish habitat

The Namoi Fish Demonstration Reach was established in 2007 and is an example of successful collaboration between local land services, community groups, Aboriginal groups, recreational fishers, landholders and NSW and Australian governments. This project is working to improve river health and fish habitat along a 150 km reach of the Namoi River between Gunnedah and Narrabri:

- 300 snags reintroduced at priority sites
- 5,700 aquatic plants revegetated at priority sites
- Over 9,000 native trees and shrubs planted
- 33.5km of woody weed management completed
- 33.5km of riparian fencing completed
- 20 off-stream watering points installed
- 8 instream and gully erosion protection works.

NSW Department of Primary Industries - Fisheries has undertaken conservation stocking of 50,000 silver perch fingerlings into the demonstration reach between Gunnedah and Narrabri. This is part of a 5 year program of restocking silver perch to help create new populations in their former range, and will be accompanied by monitoring for the Basin Plan Ecological Outcomes.

Approximately
7,728 ML
of Commonwealth environmental water has been used in the Namoi River Valley **since 2013.**

No environmental water was used in 2015-16, however **6,227 ML** was **carried over** by the Commonwealth Environmental Water Holder for the 2016-17 water year in the Namoi River Valley.

A total of **340 ML** of Commonwealth environmental water was traded (allocation only) in 2014 within the Peel catchment. As this water **was not required to meet environmental needs in 2013-14** within the Namoi River Valley, the water was traded to allow the proceeds of the sale to be used in the interest of maximising environmental outcomes elsewhere in the Murray Darling Basin.

Water entitlements and water allocations

A water entitlement is a permanent water holding for a set amount of water (e.g. 100ML) and can be thought of much the same 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 additional water becomes available or conditions become very dry or wet). Both water entitlements and water allocations can be traded on the water market.

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

Environmental water in the Namoi River Valley is planned and managed to contribute towards meeting the expected environmental outcomes set out in the Basin-wide Environmental Watering Strategy (the Strategy). The Strategy identifies outcomes that should be achievable over the longer-term, according to river operating rules, physical constraints and variable climate conditions.

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

Maintain base river flows.

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

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

Maintain the current species diversity and increase abundance of waterbirds by supporting breeding opportunities. In the Namoi River Valley, Commonwealth environmental 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. 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).

Recruitment describes a species' (like native fish, frogs and turtles) survival through all life stages. Supported recruitment means that over the long-term a species' population features a range of ages.