

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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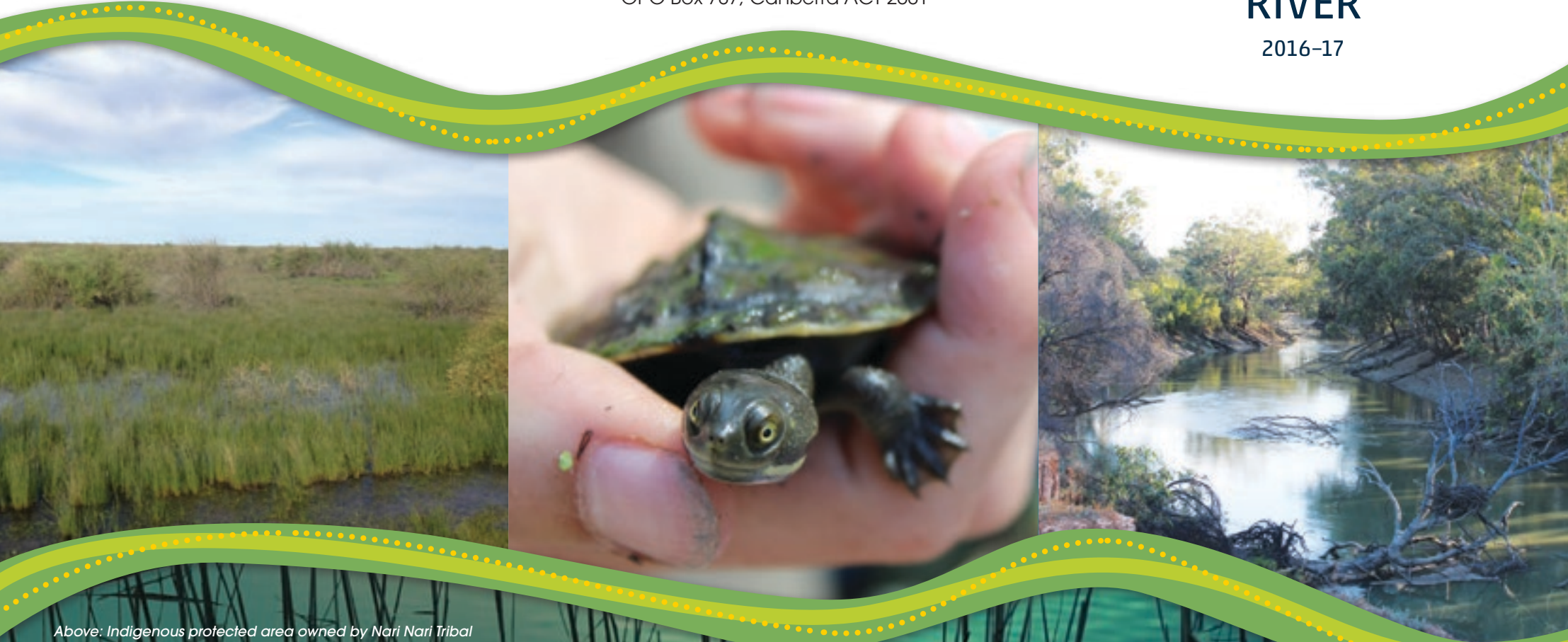


Australian Government

Commonwealth Environmental Water Office

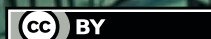
## RESTORING AND PROTECTING THE MURRUMBIDGEE RIVER

2016-17



Above: Indigenous protected area owned by Nari Nari Tribal  
Council with Commonwealth environmental water  
Cover: Murrumbidgee River  
Back cover: Baby turtle at Twin Bridges wetlands

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unless noted otherwise.



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

The Murrumbidgee River contains diverse and rich natural environments. Its natural waterways are a source of water supply for domestic water use, extensive agriculture and irrigated production, the cultural values and practices of local Aboriginal Traditional Owners and tourism and recreational activities.

Environmental water is delivered to key locations to support the region's unique native animals, plants, birds and fish that rely on healthy natural waterways including internationally and nationally important wetlands and floodplains.

The Murrumbidgee region is home to the vast and nationally significant Lower Murrumbidgee River Floodplain and the mid-Murrumbidgee River Wetlands. The floodplain covers about 200,000 hectares and includes some of the largest lignum wetlands in New South Wales. It is also an important bird breeding site, particularly for the royal spoonbill, great egret, straw-necked ibis, Australian white ibis and glossy ibis.

The mid-Murrumbidgee River Wetlands consists of several nationally significant wetlands, and

supports river red gum forests and black box wetlands that provide habitat to threatened species including the southern bell frog.

The Murrumbidgee River region is also home to the Ramsar-listed Fivebough and Tuckerbil Swamps within the Murrumbidgee Irrigation Area.

Commonwealth environmental flows are designed in partnership with state and local delivery partners to improve connections between rivers, floodplains and wetlands, particularly, to those sites that support nationally threatened species under the *Environmental Protection and Biodiversity Conservation Act 1999* and state-based legislation and wetlands of international or national significance. We are also working toward the achievement of 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, with the region experiencing more bank-full and 'fresh' events.

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.



Maintain current extent of river red gum and blackbox communities, along with improvements to condition and greater likelihood of young tree survival. These

communities are essential for providing food and habitat for many native animals across the Basin, and they are culturally significant to local Aboriginal people.



Improve the condition of lignum communities, particularly focusing on the shrublands in the Lower Murrumbidgee.



Maintain the extent of vegetation communities and prevent any further decline particularly in, or near to, the Murrumbidgee River, and Billabong and Yanco Creeks.



Maintain the current species diversity and increase abundance of waterbirds by supporting breeding opportunities.



Create the right conditions to improve native fish spawning, movement between areas, and improve the age ranges and health of their communities.



Bird watching in Redbank



## Environmental water use in the Murrumbidgee to date

The delivery of environmental water in the Murrumbidgee River region is planned and managed by the Commonwealth Environmental Water Holder and the New South Wales Office of Environment and Heritage, in consultation with local communities, as part of Murray-Darling Basin Plan implementation.

Following the breaking of the millennium drought, natural flow events and large-scale environmental watering have improved the condition of many wetlands in the lower Murrumbidgee. However, in some cases, particularly in the mid-Murrumbidgee wetlands, lack of inundation has negatively affected the recovery of vegetation, frogs and turtles.

This year, Commonwealth environmental water will build on the positive responses from vegetation in consequence of past environmental watering and provide recruitment opportunities for waterbirds, native fish, turtles and frogs.

Recruitment describes a species' (like native fish, frogs and turtles) survival through all life stages. The Commonwealth Environmental Water Holder aims to create breeding events most years, and support survival from adolescence to adulthood. Supported recruitment means that over the long-term a species' population features a range of ages.

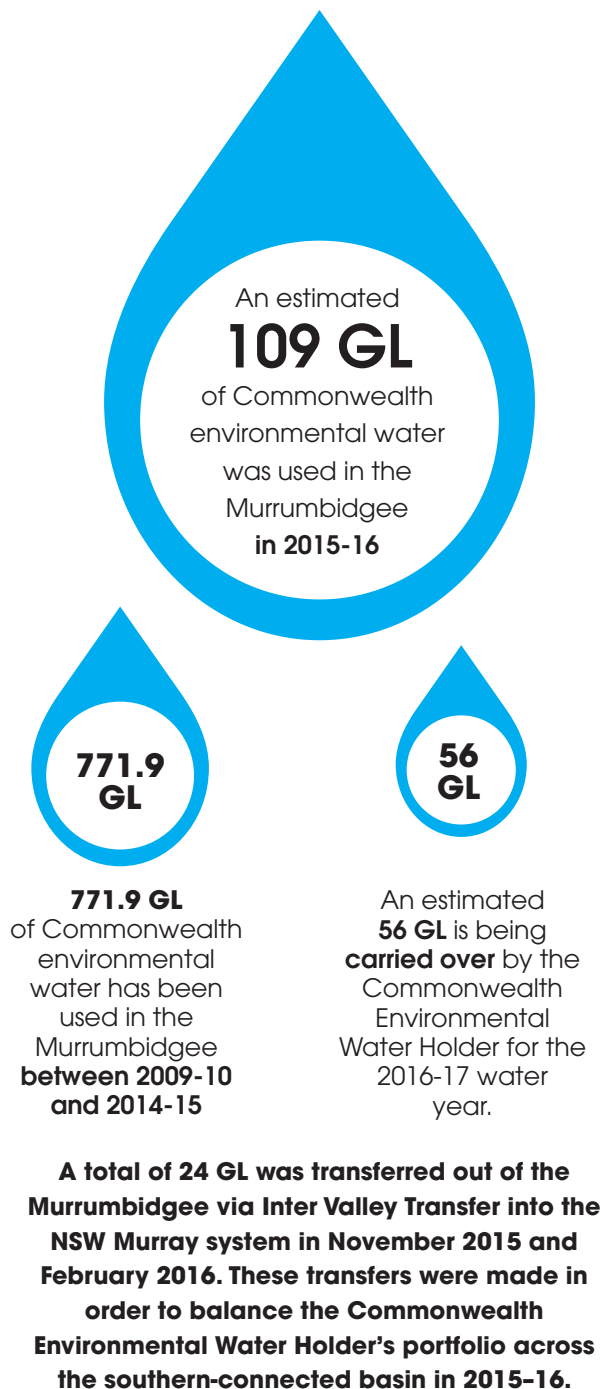
## Commonwealth environmental water supply

The water acquired by the Australian Government, including through investment in more efficient irrigation infrastructure and other measures, enables the Commonwealth Environmental Water Holder to help bring back some of the river flows needed to restore and protect the natural system throughout the Basin's irrigation districts.

This water is often used to supplement natural events and environmental water provided by State environmental water manager, New South Wales Office of Environment and Heritage, as well as conveyance and consumptive water.

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 (sell water or buy in another catchment) for equal or greater environmental benefit.



# Our partners

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

Commonwealth environmental water use is planned, delivered and managed in partnership with a number of people in the Murrumbidgee River region, including:

- New South Wales Office of Environment and Heritage (including National Parks and Wildlife Service)
- New South Wales Department of Primary Industries – Water
- Water NSW
- New South Wales Department of Primary Industries - Fisheries
- Riverina Local Land Services
- Charles Sturt University
- Murrumbidgee Environmental Water Allowance Reference Group
- Local landholders and community members
- Murray-Darling Basin Authority

The Commonwealth Environmental Water Office regularly attends community forums, events and committees within the catchment. We will continue to forge local partnerships that 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, Erin Lenon, to learn more about our work or offer suggestions for the use of environmental water locally.

### Erin Lenon

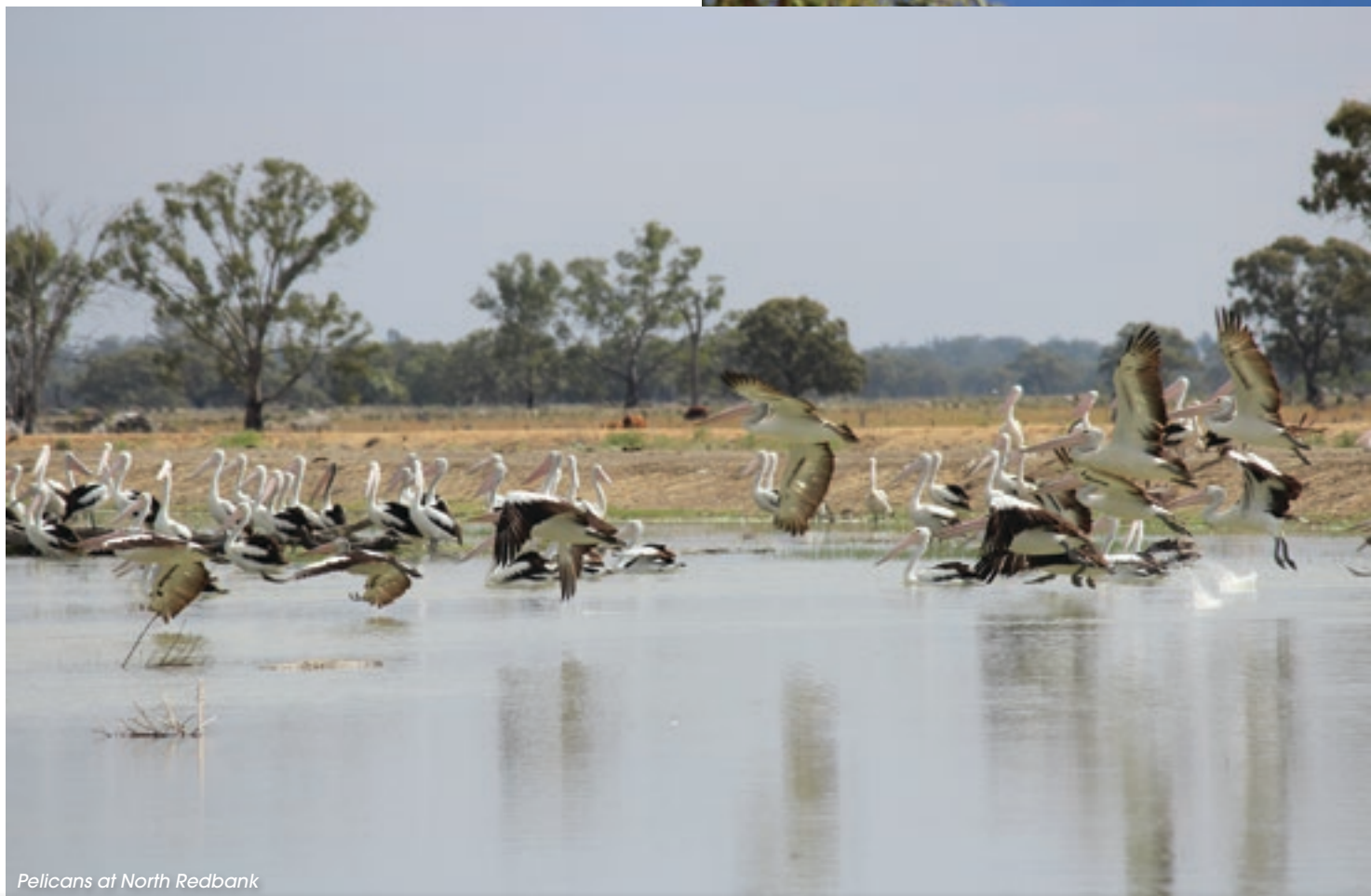
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Egret in Tarwillie



Pelicans at North Redbank



# MURRUMBIDGEE RIVER



Australian Government  
Commonwealth Environmental Water Office

The Murrumbidgee River travels around 1600km, from the Kosciuszko National Park, through the low-lying plains of the western Riverina, to where it joins the Murray River near Boundary Bend, a small town in Victoria.

The River is regulated by two major headwater storages, the Burrinjuck Dam on the Murrumbidgee River and the Blowering Dam on the Tumut River.

Most water for the Murrumbidgee River comes from the upper portions of the catchment including Cotter, Yass, Molonglo, Queanbeyan and Tumut rivers. Tributaries immediately downstream of the dams that also make a significant contribution to water flows in the Murrumbidgee River include the Adelong, Adjungbilly, Gilmore and Houghans Creeks and the Goobarragandra River.



Southern Bell Frog

## Responding to environmental demands

**Like all water users, Commonwealth and state water holders and managers must consider variable seasonal conditions when determining the best way to restore the Basin's rivers, floodplains and wetlands.**

This involves careful consideration of the urgency of environmental demands each year (and from year to year and over multiple years) and what we believe can be achieved depending on water availability due to conditions.

The following scenarios for the use of Commonwealth environmental water in 2016-17 are based on our assessment of environmental demands (in the context of targeted outcomes and watering requirements, watering history, asset condition and the available supply according to different scenarios).

**Mid-Murrumbidgee wetlands:** These wetlands are in decline due to a lack of inundation. As such, there is a high demand for water to protect these wetlands and assist in recovery.

A key priority for Commonwealth environmental watering is to support the reconnection of the mid-Murrumbidgee wetlands to the Murrumbidgee River over winter-spring.

A reconnection would contribute to river flows and inundate wetlands, preventing further decline in vegetation and provide habitat for species including waterbirds, fish, turtles and frogs. This watering would also contribute to meeting demands downstream, including Yanco Creek and the Junction and Lowbidgee floodplain wetlands.

This watering is influenced by water availability, the capacity for dam releases and assessment of potential impacts to third parties. If a reconnection cannot occur water may be pumped to some individual wetlands.

**Lowbidgee floodplain wetlands:** Watering will contribute to maintaining the condition and diversity of wetland vegetation and provide habitat and recruitment opportunities for waterbirds, native fish, turtles and frogs. The timing and extent of watering depends on environmental demand, and the activities of target species including the southern bell frog, Murray cod, Australasian bittern and eastern great egret.

If there is little water available, watering in the Lowbidgee will focus on maintaining critical refuge sites for fish, turtles and frogs. However, if it is wet, large scale wetland and floodplain inundation may be possible to maintain and build the resilience of wetlands in the Redbank system (including Yanga National Park) Nimmie-Caira and Western Lakes.

Regional scale watering (for example, restoring landscape scale waterbird habitat through the lower Lachlan and Lowbidgee floodplain) may also occur under a wetter scenario.

**Murrumbidgee River Channel and distributaries:** There is moderate demand for water to support the ongoing recovery efforts of native fish populations. Previous watering actions have contributed to the increase in native fish populations and improved water quality. Watering in 2016-17 may focus on supporting native fish health and movement, by improving flows that connect the river and its distributaries, and building habitat and conditions favoured by native fish.

**Yanco Creek system:** There is moderate demand for water to maintain the existing good condition of wetland vegetation. Depending on the availability of water, watering can reconnect and refill anabranch creeks and lagoons in the mid-Yanco Creek system.

**Junction Wetlands:** The Junction Wetlands are in decline due to a lack of inundation. As such, there is a high demand for water at a landscape scale to protect these wetlands. Inundation of the Junction Wetlands requires coordinated higher flows in the Murray and Murrumbidgee. If a reconnection cannot occur water may be pumped to some individual wetlands.

**Further information on our planning process and for a copy of the Portfolio Management Plan for the Murrumbidgee River 2016-17 visit [www.environment.gov.au/water/cewo](http://www.environment.gov.au/water/cewo)**



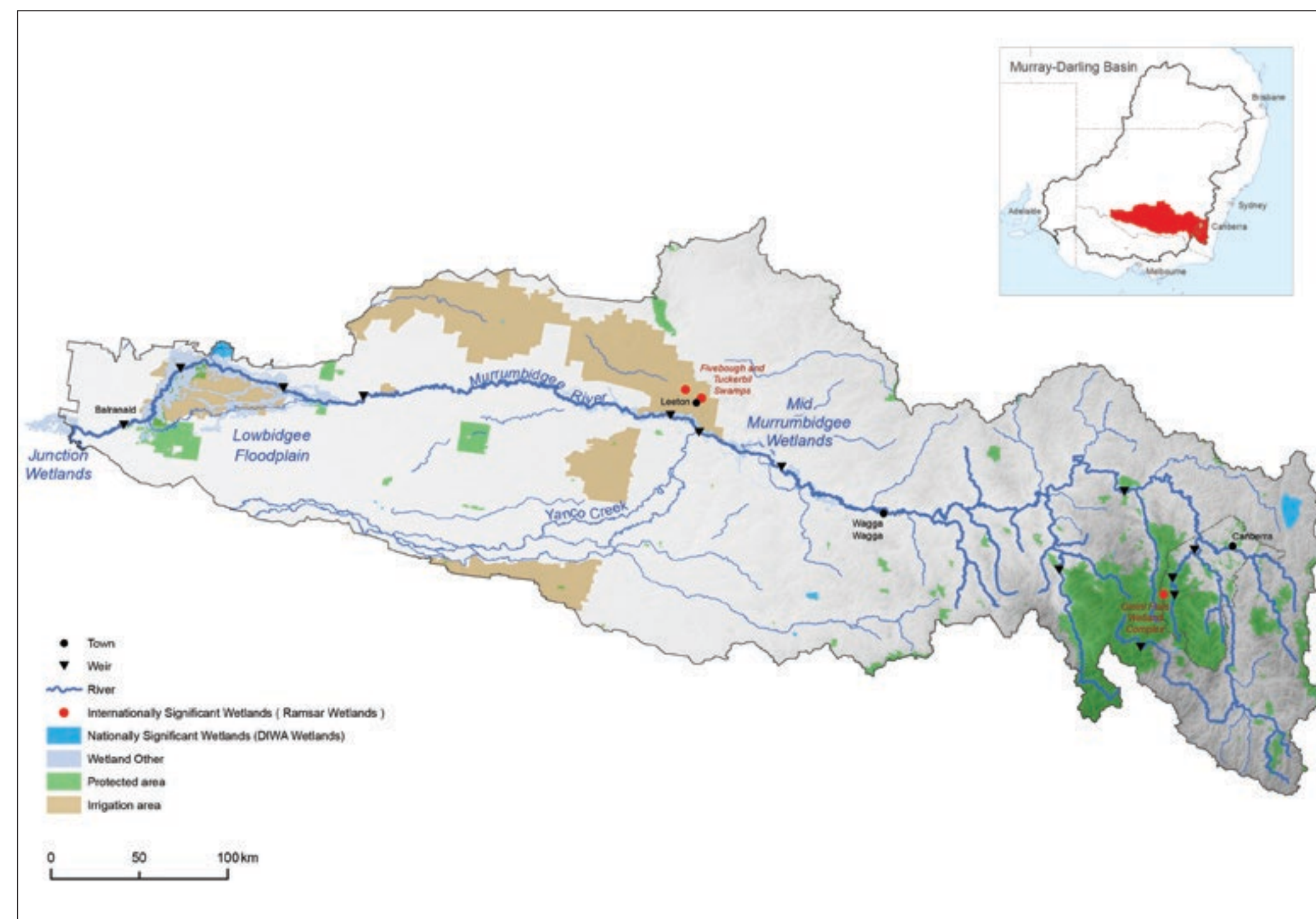
Native aquatic vegetation



Yanco weir



North Redbank



## Outcomes snapshot

Scientific monitoring shows that water delivered to the Murrumbidgee River is providing food, habitat and breeding opportunities for many of the region's unique native fish, waterbirds, plants and wildlife.

**Full monitoring reports are available each year on our website: [www.environment.gov.au/water/cewo/catchment/murrumbidgee/monitoring](http://www.environment.gov.au/water/cewo/catchment/murrumbidgee/monitoring)**

### 2015-16

Southern bell frogs were active and recorded at numerous sites in the Murrumbidgee Valley, including very high number of southern bell frogs recorded in the Nimmie-Caira.

Commonwealth environmental water supported waterbird breeding events including for Australian darter, little pied cormorant, Australian white ibis, little egret and yellow-billed spoonbill. Additionally 200 active nests were counted for the eastern great egret.

Consecutive years of inundation at Yarradda Lagoon in the mid-Murrumbidgee wetlands has resulted in an increase in diversity and extent in spiny mud grass.

### 2014-15

Environmental watering in 2014-15 saw an improvement in water quality and a reduction of dissolved nutrients on the floodplain. Return flows in the Lowbidgee Floodplain also contributed to improved water quality across river red gum wetlands.

Golden perch and the critically endangered silver perch were detected spawning along the river channel between November and December 2014.

Other native fish species such as the threatened Murray Cod and the Australian Smelt spawned in the Murrumbidgee River. Results also indicated good larval numbers and low abundance of invasive species larvae.



The mid-Murrumbidgee wetlands recorded its first breeding event of the inland banjo frog since 2010.

Six additional frog species were recorded breeding on the Lowbidgee floodplains, including the vulnerable southern bell frog.



Wetland dependent vegetation in Yarradda Lagoon was maintained and improved. There was an increase in coverage of spiny mud grass which is an important aquatic species.



There was a boom in native bird breeding following environmental water delivery to the Yanga National Park in early 2015. Nests of the nankeen night heron, cormorant and darters were recorded. Additionally, the eastern great egret bred for the first time in the Park since 2011.



Evidence of highly productive microinvertebrate communities (important food for larval fish and filter-feeding waterbirds) were recorded.

### 2013-14



Improved fish reproduction and condition led to an increased abundance of native species including bony herring, carp gudgeon and Murray cod.



Environmental water supported diverse food webs including algae and microinvertebrates for the benefit of fish and waterbirds native to the Lowbidgee wetlands. These are critical food sources for wetland fauna including native larval fish and filter feeding duck species.



Waterbird habitats benefited from water delivered to wetlands. 52 species, including threatened (under NSW legislation) blue-billed and freckled ducks, were observed across 49 survey sites.



Southern bell frogs were recorded at key sites in the Nimmie-Caira following environmental watering.