

THE BIDGEE BULLETIN

Quarterly Newsletter of the Murrumbidgee Monitoring Program



WATERING OUTCOMES

As in previous years Commonwealth environmental water is being used to support aquatic plants and animals in the Murrumbidgee Selected Area. This year environmental water was largely used to target floodplains and wetlands to improve water quality, support populations of water dependent plants and animals, maintain frog populations and create breeding opportunities for threatened species including the southern bell frog and Australasian bittern.

Continued dry conditions in Spring 2019 meant that environmental water needed to be carefully managed and focused on high priority outcomes. These included maintaining critical refuge habitats - Wagourah Lagoon, Yarradda Lagoon, Telephone Creek and Tala Creek. Maintenance of these wetland habitats is important for native fish and turtles, and the Murrumbidgee refuge sites continue to support high native fish diversity with large populations of carp gudgeon, Murray-Darling rainbowfish, flathead gudgeon, Australian smelt, golden perch and bony bream.

Welcome to Issue 3 of The Bidgee Bulletin. The field monitoring season is now complete, with the last of the four wetland surveys conducted over the last two weeks of March. In this issue we review the highlights of the season and summarise the outcomes from Commonwealth environmental watering actions during the 2019-20 water year. We also introduce our Chief Twitcher from the NSW DPIE, Dr Jennifer Spencer.

The Bidgee Bulletin is a quarterly newsletter designed to provide updates on our progress as we monitor the ecological outcomes of Commonwealth environmental water flows in the Murrumbidgee Selected Area. The 2019-2022 program builds on the previous five year monitoring period (2014-2019) and uses many of the same methods.



Turtles also benefited from the refuge habitats, with all three Murrumbidgee species (broad-shelled, eastern long-necked and Macquarie river turtles) making an appearance this season. Environmental water was also used to support frog and waterbird breeding events in the Gayini Nimmie-Caira where it was utilised to maintain water levels and support breeding activity in threatened southern bell frog populations. Monitoring of these sites throughout the season showed that the high numbers of male frogs heard calling in September was followed by the detection of tadpoles, recent metamorphs and finally larger numbers of juvenile southern bell frogs in January and March.

Environmental water, also important for waterbirds, was used to maintain water levels over summer at several wetlands, boosting waterbird breeding and increasing food resources. Waterbird breeding activity was monitored over the season with nesting detected at multiple wetlands following environmental watering actions in Gayini Nimmie-Caira and the mid-Murrumbidgee.

Some notable bird sightings from the February wetland bird surveys (conducted in association with the NSW Department of Planning, Industry and Environment and National Parks and Wildlife Service) included the threatened blue-billed duck, freckled duck, Australian spotted crake and the migratory wood sandpiper. It was great to see two Australasian darters on nests at Yarradda Lagoon and two fledgling darters at Gooragool Lagoon during the March wetland monitoring surveys.

Mercedes Lagoon in Yanga National Park received environmental water in December 2019, transforming the previously dry wetland into a lush carpet of spike rush, and making it a little difficult to find a clear patch of water to set the nets. Native carp gudgeon, frogs, tadpoles and eastern long-necked turtles were enjoying the water in January, and numerous waterbirds including pied and little black cormarants, Pacific black ducks, and white-necked and white-faced herons were observed making the most of the lush conditions.

Top: southern bell frog at Eulimbah Swamp, January 2020. Centre: Australasian bittern (photo credit: Matthew Herring). Lower: golden perch recorded at Mantangery Lagoon.

Mercedes Lagoon, Yanga National Park. Left: dry in November 2019. Right: after receiving environmental water, January 2020.



UNDER THE PUMP-SUNSHOWER LAGOON

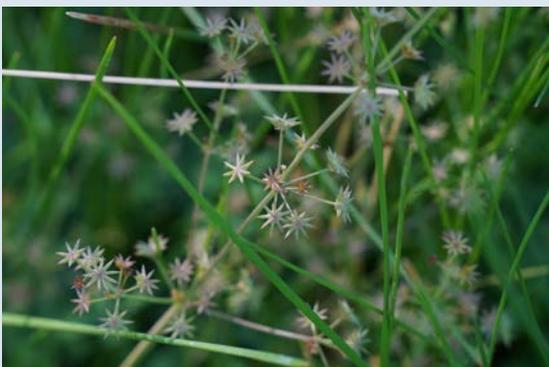
Sunshower Lagoon is one of the four mid-Murrumbidgee wetlands that are regularly monitored by the Murrumbidgee Monitoring, Evaluation and Research Program. Regular monitoring of vegetation, along with surveys for fish, frogs and waterbirds when the lagoon has held water, have been conducted at Sunshower Lagoon since 2010. The availability of long-term data increases our understanding of wetland recovery following the restoration of more natural flow regimes.

Since 2010, Sunshower Lagoon has undergone periods of wetting and drying with four main watering events. The wetland was inundated by a combination of natural and managed flows between spring 2010 and autumn 2012, to a lesser extent during a small flow in 2015, and then filled completely when above average rainfall in the catchment caused higher river flows over spring and summer 2016. Environmental water was used to reconnect the wetland to the river system in 2017. After a few dry years pumping infrastructure was installed in spring 2019 to allow for wetland inundation without the need for rising river levels.

Pumping allows targeted use of Commonwealth environmental water and means that screens can be used to prevent large invasive common carp from entering wetlands. Since installation was completed Commonwealth environmental water has filled the lagoon to a depth of around 1m and delighted the frog population. Recent monitoring surveys detected a suite of frogs calling, including the threatened southern bell frog which has not been heard at Sunshower Lagoon since 2010. The southern bell frog was once widespread and abundant in south-eastern Australia but has declined significantly and is now a focus of many environmental watering actions in the Murrumbidgee. Many other native frogs have also been recorded with the spotted marsh frog and Peron's tree frog being the most common.

Pumping the wetland and removing carp has led to significant increases in vegetation cover and diversity. Large mats of spiny mudgrass have established and there has been a big increase in aquatic species diversity when compared to previous years. Frog breeding activity has increased with several species of tadpole detected and large numbers of waterbirds have been observed since pumping commenced. Large groups of grey teals, Pacific black ducks and chestnut teals were seen enjoying the water during March monitoring. Recent monitoring also recorded the return of eastern long-necked turtles to the lagoon.

Over the next few years we will be monitoring how the wetland recovers now that the natural hydrological regime can be maintained by pumping. There are high hopes following the first pumped flows in to Sunshower Lagoon - it's still early days, but the return of southern bell frogs is an exciting sign for the future and we'll be watching closely over the next few seasons.



From top: Sunshower Lagoon from above; Peron's tree frog; damselfly amongst the reeds; measuring an eastern long-necked turtle captured in the lagoon; star fruit. Photo credits: Vince Bucello, Gaye Bourke.



The second round of broad scale bird surveys took place across the Murrumbidgee region in February. Many wetlands had received environmental water since the October surveys and breeding activity was observed at several sites. Species observed included the Australasian darter (above left), juvenile red-kneed dotterel (above centre) and breeding nankeen night heron (above right). Surveys are conducted on foot, and nesting activity is observed and recorded by kayak. Photo credits: Damian Michael.

SHINING A LIGHT ON:

The inland banjo frog



Also known as the giant pobblebonk frog (*Lymnodynastes interioris*) because of its distinctive deep call, this large frog is found in a range of waterbodies across the western edge of the NSW slopes region and the Murray River floodplain in Victoria. The adult frogs burrow in dry periods and especially like sandy or loamy soils - they quite often pop up in gardens. The distinctive call and their 'mini golf ball' sized tadpoles are often detected during our surveys but it's less common to find adults when spotlighting because they move a long way from the water. When the males call it's generally from burrows or where they're well hidden amongst floating vegetation. If you're lucky enough to spot one out and about they can be recognised by their large size, upright stance, large tibial glands and orange markings.

YANGA LAKE TURTLE RESCUE



With the drying down of Yanga Lake near Balranald in late October 2019 hundreds of turtles were observed seeking refuge in the remaining pools of water. As temperatures rose and water levels dropped further a rescue operation swung into action. Headed by Yanga National Park Ranger Simone Carmichael and National Parks and Wildlife Service (NPWS) field crew and supported by a team of local contractors and volunteers the group worked tirelessly to collect turtles from the lake and transport them to a nearby site on the Murrumbidgee River. Over 400 turtles were rescued and relocated over an intense three day period. The Charles Sturt University team and turtle expert Dr James Van Dyke from La Trobe University provided advice on suitable relocation points in the nearby Murrumbidgee River. Notably, many of the rescued turtles were big old Macquarie short-necked turtles that are really important as they take many years to mature. Thanks to all those who jumped in to help!



From top: NPWS staff net one of the remaining pools of water at Yanga Lake; NPWS crew member Russell Hampton holds a rescued turtle ready for relocation. Photo credit: Yanga NPWS.

The next issue of The Bidgee Bulletin is out in late June.

To join the newsletter mailing list visit:
<https://www.csu.edu.au/research/ilws/research/environmental-water/murrumbidgee-mer>

In the next issue we'll discover some of the smaller projects that operate in conjunction with the MER Program. There will also be an update from PHD student Anna Turner and we'll meet water manager Madeline Gorham from the Commonwealth Environmental Water Office.

The Murrumbidgee MER team would like to acknowledge the consortium partners and local landholders with whom we work.



We respectfully acknowledge the Wiradjuri, Nari Nari and Muthi Muthi peoples, traditional owners of the lands on which this publication is focused

WHO'S WHO IN THE ZOO?

And while she's out and about and can't defend herself, here are a few details about our colleague and Chief Twitcher at NSW DPIE, Dr. Jennifer Spencer



Organisation: *NSW Department of Planning, Industry and Environment*

Position: *Senior Scientist*

I studied at: *Australian Catholic University, Sydney (PhD) and University of Wales, Cardiff (BSc Zoology)*

In my previous job I: *was a research assistant in Jervis Bay Marine Park*

Food attitude: *Colourful! Lots of veggies and fruit please*

Beverage of choice: *Being pregnant (now a new mother) at the moment I'm afraid it's a lemonade*

How would you describe your work to a child? *I count animals that live in wetlands like birds and frogs*

What's the best thing about your work? *The places we get to visit!*

Your work in three words? *Wetlands, Birds, Mud*

Is your career your parents fault? *Probably... there was a lot of mud and swamps in Wales where I grew up!*

It's now 2030, where are you? *That's a scary question can I pass....*

Flashback to 1999 – where were you then? *Living in Cardiff, studying for my undergraduate degree and about to go to Kenya on a university field trip*

Given the chance, who would you like to be for a day? *Jane Goodall, she is an amazing lady*

What's your favourite sign off? *Cheers big ears...*