

THE BIDGEE BULLETIN

Quarterly Newsletter of the Murrumbidgee Monitoring Program



LOOKING FORWARD, LOOKING BACK

Over the past five years Commonwealth environmental water has contributed to important ecological outcomes in the Murrumbidgee, targeting rivers, floodplains and wetlands right along the Murrumbidgee as well as through the Yanco-Billabong, Coleambally and Murrumbidgee Irrigation Areas. Environmental watering actions are targeted at securing key water dependent communities and populations including native frogs, waterbirds, fish, turtles and wetland vegetation communities, and improving water quality.

Due to the very large size of the Murrumbidgee catchment, our monitoring focuses on key wetlands in the mid-Murrumbidgee between Narrandera and Hay which include river red gum forest with paleochannels (inactive streams filled with sediment) and oxbow lagoons; open river red gum forests with grassy aquatic meadows and spike rush communities along the Murrumbidgee channel between Maude and Balranald; and the lignum and black box wetland systems further from the main river channel through the Lowbidgee Delta between Maude and Waugorah.

Welcome to Issue 1 of The Bidgee Bulletin. In this first issue we look back at some of the highlights of the past five years of the Long Term Intervention Monitoring Project and look at what lies ahead for the Murrumbidgee Monitoring, Evaluation and Research team as we move into the next three year program evaluating the outcomes of environmental watering actions in the Murrumbidgee. We also report on our first field trip of the 2019-2020 season and give a light-hearted introduction to a key member of our team.

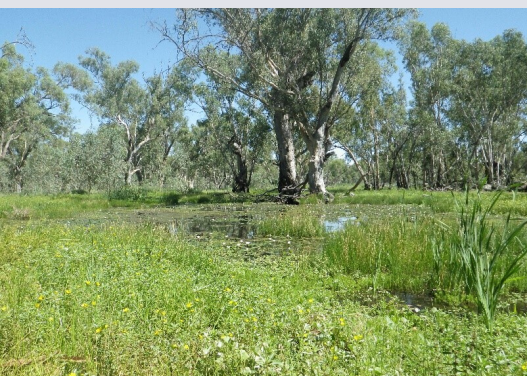
The Bidgee Bulletin is a quarterly newsletter designed to provide updates on our progress as we monitor the ecological outcomes of Commonwealth environmental water flows in the Murrumbidgee Selected Area. The 2019-2022 program builds on the previous five year monitoring period (2014-2019) and will use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



**Avalon Swamp - Lignum-black box wetland
in the lower Murrumbidgee**



**Yarradda Lagoon - Oxbow lagoon with
fringing red river gum in the mid-
Murrumbidgee**



**Two Bridges Swamp - Red river gum forest
with spike rush along the Murrumbidgee
channel**

We love frogs, they play a very important role in the ecosystem consuming tonnes of insects each year and providing a valuable food for waterbirds. The Murrumbidgee supports a diverse array of frogs, with six frog species, including the endangered southern bell frog, calling our wetlands home.

Some frog species, including the southern bell frogs, don't cope well when wetlands are dry for extended periods, so in dry years environmental water is used to provide persistent refuge habitat that helps frogs, turtles and fish survive while in wetter years environmental water is used to create larger areas of breeding habitat. This strategy is helping to return southern bell frogs back into their former habitats and has increased the number of bell frogs so they are at less risk of extinction.

Turtles are also common throughout our environmental watering sites and three turtle species (eastern long-necked turtles, Macquarie River turtles and broad-shelled turtles) are also benefiting from the creation of refuge habitats and the boom in food resources in wetter years when larger areas of the floodplain and wetlands are watered.

Waterbirds respond to water management at large scales, often moving within and between catchments to take advantage of available resources. Waterbirds respond strongly to environmental watering, and will also forage in farm dams, canals, and irrigated bays (particularly rice). The number of species, breeding activity and number of individuals can change quickly in response to water availability, particularly an increase in the area and the diversity of inundated habitats. Commonwealth environmental water is supporting waterbird feeding habitats and plays a critical role in supporting waterbird breeding and fledging. In 2016-17 Commonwealth environmental water helped fledge over 6000 straw necked ibis, and water delivery was also successful in maintaining waterbird refuge habitat and supporting colonial bird breeding. Environmental water helped to initiate and maintain small egret and cormorant colonies in 2014-15, 2015-16 and 2018-19, and was used to support natural widespread flooding in 2016-17 to ensure water levels were maintained in large ibis, egret, heron and pelican colonies over summer months.

Delivery of Commonwealth and NSW environmental water was also instrumental in extending wetland inundation into summer months to support bittern breeding. The nationally endangered Australasian bittern and Australian little bittern are priority waterbird species for environmental water managers and the Australasian bittern has been regularly recorded during wetland monitoring in the Lower Murrumbidgee Floodplain.

Fish communities and fish breeding is monitored in wetlands and within the Murrumbidgee River. Notable catches included golden perch, Murray Cod and silver perch which are frequently recorded spawning within the Murrumbidgee River and also visit floodplain wetlands. Other native fish species included carp gudgeon, Australian smelt, bony herring, Murray-Darling rainbowfish, flathead gudgeon and unspotted hardyhead. Like frogs and turtles, native fish communities benefit from the creation of persistent refuge pools, especially during dry conditions. Commonwealth environmental water has been playing an key role in maintaining refuge habitats during dry periods and also creating opportunities for breeding and for fish to move back into the river.

GOING WITH THE FLOW

Conditions in the Murrumbidgee Catchment remain dry, with general security allocations, which make up the bulk of the Commonwealth Environmental Water Holdings, at 6% as of the 2nd of September.

Under the extreme dry scenario the focus of environmental water is on maintaining critical refuge habitats to secure populations of frogs, turtles and fish. Infrastructure assisted water delivery, including pumping, is being used to support critical habitats in the mid-Murrumbidgee and lower-Murrumbidgee floodplain, as well as other high priority wetland assets in the Murrumbidgee and Coleambally Irrigation areas and the Billabong-Yanco Creek system.

UPDATE ON MONITORING:

September is the first monitoring trip of the field season. It's generally relatively chilly overnight and tends to be fairly quiet in terms of fish, frog, tadpole, and turtle activity. This year saw some very cold nights, with overnight temperatures dropping to near zero. A small number of lignum wetlands in Gayini contained water and frogs were actively calling with plains froglet, spotted marsh frog and good numbers of southern bell frogs all heard calling. Southern bell frogs were also observed both in and out of the water on our last (and warmest) night of frog surveys.

Several monitored wetlands in Yanga National Park were drying down, with delivery of environmental water scheduled for late October. This watering action is designed to ensure that core refuge habitats are maintained to provide suitable for food resources for resident waterbirds.

In the mid-Murrumbidgee monitored sites include priority wetlands that have recently received or are scheduled to receive Commonwealth environmental water via pumping or gravity-fed actions. Continued cool temperatures in the second week of surveys likely contributed to low captures of fish, frogs and turtles. Several frog species (plains froglet and spotted marsh frog) were heard calling in high numbers but few individuals were observed during surveys.

Southern bell frogs are generally described as a large, bright emerald green frog. But they can also occur as a deceptively dull brownish colour, or even almost black.



Preparing to head out for an evening of frog surveys at Gayini Nimmie-Caria

What is environmental water?

Environmental water is a water entitlement with annual allocations obtained by the Commonwealth through investment in water-saving infrastructure and purchase of water licences. The Commonwealth Environmental Water Holder receives the same allocations and is required to follow the same carryover, trade and water use rules as all other equivalent water licence holders



Water level loggers have been in place at the twelve wetland monitoring sites since 2014. Data downloaded from the loggers provides information about the depth, extent and duration of inflows and helps our understanding of wetland hydrology. The field team accesses and checks each logger regularly - one of the more popular tasks on the annual calendar.



SHINING A LIGHT ON:

The grey snake

With the addition of Dr Damian Michael to the project team at CSU, we've gained some serious expertise in fauna of the reptilian variety. Most field team members tend to avoid any encounters of the slithery kind, but by the end of his first wetland monitoring trip Damian had identified the little-known grey snake and recognised the significance of the sighting. Although well known to many locals, this is the first formal record of a grey snake in nearly 30 years. This small snake looks (to the uninitiated) a bit like a juvenile brown snake. It is listed as endangered on the IUCN Red List and little is currently known about its ecology. Enter Emma Stevens, a CSU Honours student who commenced part-time in February, who will be studying the grey snake's distribution and habitat preferences. We'll share more on Emma's work and discoveries in future issues.

Follow us on social media - the MER team will be posting photos and updates as we head in to the 2019-20 field season



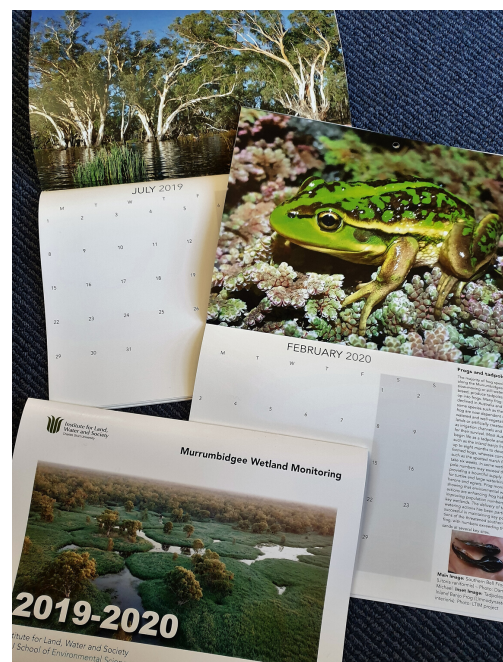
@bidgeemer



@BidgeeLTIM

GETTING ENGAGED

To kick off our community engagement activities for 2019-20 we recently produced the first Murrumbidgee Wetland Monitoring calendar. Each month focuses on one component of the wetland food web, including wetland vegetation, aquatic plants and algae, crustaceans, native fish, frogs and wetland birds. A run of 250 financial year calendars has been distributed to our service providers, stakeholders and local communities. Ideas for future calendars include featuring different monitoring activities, and working with local groups including Indigenous communities and local schools to produce special editions.



In the next issue we'll report on the Spring bird surveys which will be taking place across the mid-Murrumbidgee and lower-Murrumbidgee during October. There will also be updates from our November wetland monitoring activities and some early findings from surveys of floodplain reptile communities. We'll also introduce Researcher and reptile guru Dr Damian Michael.

THE NEXT ISSUE OF WATERWAYS WILL BE PUBLISHED IN LATE DECEMBER.

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



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

WHO'S WHO IN THE ZOO?

In this issue we first introduce our illustrious Project Leader, Skye Wassens...

Organisation: *Charles Sturt University*

Position: *Associate Professor of Ecology*

I studied at: *Katoomba, Merriwa and then Muswellbrook High schools, later did my environmental science (honours) degree and obtained my PhD from Charles Sturt University*

In my previous job I: *was a horse trainer*

Food attitude: *herbivore*

Beverage of choice: *tea*

How would you describe your work to a child? *I teach adults about science and study plants and animals that live in the water*

What's the best thing about your work? *Getting to spend time outdoors and seeing amazing parts of Australia and seeing my students develop into successful scientists*

Your work in three words? *Numbers, Meetings, Frogs*

Is your career your parents fault? *Almost certainly*

It's now 2030, where are you? *Standing in a bright and healthy wetland watching bell frogs play around at my feet (but I will probably be in a meeting)*

Flashback to 1999 – where were you then? *Just about to start my PhD research*

Given the chance, who would you like to be for a day? *Anyone with a trade- I have lots of jobs I need to finish off around the house*

What's your favourite sign off? *Ok, I have to get to another meeting*

