

THE BIDGEE BULLETIN

Quarterly Newsletter of the Murrumbidgee Monitoring Program



WETLAND BIRD SURVEYS

Large scale waterbird ground surveys are being undertaken twice a year - in spring and summer, designed to evaluate long term trends in waterbird abundance as well as short term waterbird responses to individual environmental watering actions. The last round of surveys were completed at 42 sites across the mid and lower Murrumbidgee during October 2019.

Survey sites represented a range of habitats including open lakes and lagoons, vegetated spike-rush and lignum wetlands, and rivers and creeks. The survey team was led by waterbird experts Dr Carmen Amos and Dr Jennifer Spencer from the Department of Planning, Industry and Environment and included Damian Michael and Gaye Bourke (Charles Sturt University) Lachlan Webster and Gail Russell (Ecosurveys) and Nathan McGrath (DPIE). Surveys were completed over seven days across the mid and lower Murrumbidgee floodplain.

Welcome to Issue 2 of The Bidgee Bulletin. In this issue we share some of the highlights of the recent bird surveys conducted in association with the Department of Planning, Industry and Environment and National Parks and Wildlife Service. We also report on the second wetland monitoring field trip of the 2019-2020 season and introduce one of our key field team members - Dr Damian Michael.

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.



Royal spoonbill and yellow-billed spoonbill near Loorica Lake, western lakes region



Checking the frog call recorder, Goorogool Lagoon, mid-Murrumbidgee region



Eastern long-necked turtle at Waugorah Lagoon, Yanga National Park

Although conditions were dry across many of the survey wetlands Commonwealth and NSW environmental water created aquatic habitats that were utilised by a diverse range of waterbirds with 43 species recorded in the lower Murrumbidgee. This included a range of local shorebirds (red-necked avocets, red-kneed dotterels, black-fronted dotterels, black-winged stilts, red-capped plovers), and migratory shorebirds (sharp-tailed sandpipers, marsh sandpiper, curlew sandpiper and a long-toed stint). Three species of tern (Caspian, Australian gull-billed and whiskered) were spotted on Tala Lake.

Fewer sites contained water in the mid-Murrumbidgee but 21 waterbird species were recorded at wetlands that had received environmental water, although abundances were low. Our newest environmental water managed site, Willbriggie (Darlington Lagoon) had its first waterbird families move in with Australian grebes observed breeding.

The next bird survey is scheduled to take place in February 2020.

Thanks to Carmen Amos from DPIE Albury Office for contributing details for this article

UPDATE ON MONITORING: NOVEMBER 2019

The November wetland monitoring trip is generally when things start hotting up - both temperature-wise and in terms of fish, tadpole, frog and turtle activity. This year was no exception with temperatures hitting 43C at Gayini Nimmie-Caira and plenty of fish, frog and turtle action in Yanga National Park, Gayini Nimmie-Caira and the mid-Murrumbidgee.

We were happy to record six big broad-shelled turtles and an eastern long-necked turtle in Waugorah Lagoon which is one of the regions permanent lagoons, providing an important refuge during very dry times. Native fish were also thriving with nearly 5000 small-bodied carp gudgeon recorded as well as eighteen good-sized bony bream.

Commonwealth and state environmental water delivery has been underway in Gayini Nimmie-Caira since November. These watering actions were aimed at providing habitat for a range of native species, including southern bell frogs, which were clearly enjoying the newly watered habitat. Other frog species including the plains froglet and spotted marsh frog were also loudly voicing their approval. These actions were designed to support bell frog breeding and strengthen populations so they are better able to cope with future dry periods.

In the mid-Murrumbidgee Commonwealth environmental water is being delivered to key lagoons via pumping or irrigation infrastructure. Good numbers of plains froglet, spotted marsh frog and Peron's tree frog were heard calling at watered sites and we are expecting activity to ramp up as additional wetlands are pumped over summer. This is already occurring at Sunshower Lagoon where pumping is currently underway - and a crescendo of frog calls including southern bell frogs has been recorded. We can't wait to get on the ground there for the January surveys to witness and document all the action!

YARRADDA LAGOON: 2014 - 2019

At Yarradda Lagoon Commonwealth environmental water is being used to re-establish the long term wetting and drying regime, restoring natural seasonal flows, maintaining critical refuge habitat, and promoting the re-establishment of important water-dependent vegetation which was lost during the millennium drought.

Over the past five years water levels at Yarradda Lagoon have been managed using a combination of pumping infrastructure, a managed 'river to wetland' connection and natural inflows during a major flood in 2016. More recently the lagoon was allowed to 'dry down' to remove a large number of exotic carp before being re-filled by pumping.

The long term trends are showing an increase in native fish species and native vegetation recovering well with a steady increase in the number of aquatic species being recorded. Frog activity is also on the up with increasing numbers of tadpoles detected and five species of frog, including the southern bell frog, now in residence.

The use of pump screens seems to have been effective at keeping out large European carp and goldfish. Interestingly, many small-bodied native fish seem to be able to move through the carp-exclusion screens, including the flat-headed gudgeon which is rarer in other wetlands.

Australian smelt, bony herring, carp gudgeon, flat-headed gudgeon and Murray-Darling rainbowfish have all been recorded following pumping actions, and screens have reduced the presence of exotic species to small numbers of juvenile carp and goldfish.

2018-19 was the fourth consecutive year that the lagoon has been inundated to at least 50% of its boundary and the regular watering regime will continue to support and strengthen fish, frog, turtle and vegetation communities which will help them withstand dry conditions in future.



Yarradda Lagoon (top to bottom): drying in Spring 2018; removal of large carp; vegetation recovery in January 2019; aquatic vegetation in September 2019; native flathead gudgeon recorded during September 2019 monitoring.

Wetland fish are sampled using large and small double winged fyke nets. Nets are set in the late afternoon and removed early the following morning when fish are identified, measured and released. Using nets with different sized mesh ensures high detection rates for target species and provides data that allows us to assess fish community composition, population size and structure, and the presence of exotic species



Charles Sturt University researcher Damian Michael and Honours student Eva Moore check beneath an artificial bark cover at Mantangery Lagoon in the mid Murrumbidgee

Left to right: Charles Sturt University student volunteer Lachlan Spalding checks a marbled gecko found beneath an ABC at Sunshower Lagoon in the mid-Murrumbidgee; it's not only lizards finding new homes under the foam - this microbat was found under a cover at Avalon Dam, Gayini Nimmie-Caira

GETTING TO KNOW YOUR ABC'S

The use of artificial bark covers (ABCs) is a novel method of surveying for tree-dwelling fauna by wrapping strips of foil-backed closed-cell foam around selected trees. After leaving the wraps in place for a few weeks we check beneath them periodically to look for small reptiles and invertebrates that may have sought shelter beneath the foam. ABCs reduce the need to remove bark from large trees in search of tree-dwelling species, thus minimising disturbance to the environment when surveying for reptiles and invertebrates.

We are using this method to explore how tree-dwelling floodplain reptiles respond to wet and dry conditions. We also aim to improve our understanding of the different reptile species that inhabit floodplain environments.

Researcher Damian Michael is also leading a separate project looking at the contribution of environmental water to the conservation and management of wetland dependant species such as the endangered grey snake, known as *Nhiibi* in Kamilaroi, an Indigenous language group from northern New South Wales.

Recently we were joined by journalist Justine Hausheer from The Nature Conservancy (TNC) for an afternoon of fieldwork at Gayini Nimmie-Caira, a TNC-managed property between Balranald and Hay in New South Wales. Follow the link to read her thoughts on our use of ABCs to survey for arboreal reptiles in the Murrumbidgee River floodplain:

<https://nrmedia.org/2019/09/wrapping-trees-to-find-reptiles/>



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 our January wetland monitoring activities and we'll meet team researcher and Chief Twitcher Dr Jennifer Spencer.

**THE NEXT ISSUE OF
WATERWAYS WILL BE
PUBLISHED IN LATE
MARCH 2020.**

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



**Charles Sturt
University**

We respectfully acknowledge the Wiradjuri, Nari Nari 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 introduce researcher and reptile guru Dr Damian Michael...

Organisation: *Institute of Land, Water & Society at Charles Sturt University*
I studied at: *The Victorian University of Technology (Chemistry) before transferring to Charles Sturt University to complete an Honours degree in Ecosystem Management followed by obtaining my PhD in Landscape Ecology at The Australian National University.*

In my previous job I: *Managed several large-scale, long-term biodiversity monitoring programs in south-eastern Australia, published almost 100 papers and books on wildlife conservation in production landscapes, developed lots of awesome science communication products and delivered hundreds of public presentations and landholder information sessions.*

Food attitude: *Home grown - I love to experiment with Indian/Thai-fusion styles.*

Beverage of choice: *IPA or Pale Ale*

How would you describe your work to a child? *I am trying to save the environment by catching lizards and snakes and talking to people about not killing lizards or snakes.*

What's the best thing about your work? *I get to work in some special parts of the country and have amazing encounters with wildlife.*

Your work in three words? *Important, challenging, rewarding*

Is your career your parents fault? *Definitely shaped by early childhood experiences and opportunities.*

It's now 2030, where are you? *Travelling to Madagascar*

Flashback to 1999 – where were you then? *In third year of uni.*

Given the chance, who would you like to be for a day? *Alex Honnold*

What's your favourite sign off? *Catch ya later alligator!*