



Murrumbidgee Monitoring Evaluation and Research Program, ecological responses to Commonwealth environmental water, Field Report. December 2019



Setting nets at Gooragool Lagoon, November 2019

Bourke, G., Wassens, S. and Michael, D. (2019). Murrumbidgee Monitoring Evaluation and Research Program, ecological responses to Commonwealth environmental water, Field report. Number 2, December 2019. Charles Sturt University, Institute for Land, Water and Society. Prepared for the Commonwealth Environmental Water Office.

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Ecological responses to Commonwealth environmental water in the Murrumbidgee system as of 30 November 2019

This report describes preliminary outcomes of Commonwealth environmental watering actions at selected wetlands in the mid and lower Murrumbidgee. These surveys are conducted four times a year as part of the Murrumbidgee Monitoring, Evaluation and Research Program and include assessment of ecological outcomes in the Murrumbidgee River and connected wetlands through the mid-Murrumbidgee and Lowbidgee floodplain wetlands as outlined in [the Murrumbidgee Monitoring and Evaluation Plan](#).

Routine monitoring of fish, turtles, frogs, tadpoles, water quality, and vegetation diversity was undertaken at the 12 MER wetland monitoring sites in the Murrumbidgee Selected Area during November 2019. All sites were accessible, but five sites were either dry or had water levels that were too low to set nets. Two additional pumped wetland sites in the mid-Murrumbidgee (Mantangery Lagoon, Darlington Lagoon) were included in this monitoring round.

Weather conditions were variable with overnight lows from 7°C at Darlington Point in the mid-Murrumbidgee to 27°C at Balranald in the lower Murrumbidgee. Daytime conditions were equally volatile with maximum temperatures reaching 43°C combined with strong hot winds and dust storms at Gayini Nimmie-Caira, followed by cold gusty winds and low temperatures in the mid-Murrumbidgee.



Waugorah Lagoon - water level low, November 2019.

Table 1- Site Summary

Site	Status	Notes
Mantangery	Full	Pumping has ceased and lagoon is full. One 420mm golden perch caught.
Gooragool	Full	Recently received water from CEWO via Mantangery. Captured one 650mm carp and 1500+ 15-25mm carp.
Sunshower	Dry	Scheduled for environmental water via pumping late in 2019, pumping infrastructure installation now largely complete.
Yarradda	Full	Small numbers of Peron's tree frog tadpoles captured in nets.
Nap Nap	Full	Southern bell frogs heard and observed. Small numbers of juvenile goldfish in nets.
Avalon Swamp	Wetland is dry, dam 2/3 full	Small numbers of native fish and large number of yabbies captured.
Eulimbah Swamp	Channel full, water moving into lignum swamp	Southern bell frog adults and tadpoles captured.
Telephone Creek	Creek line is wet	The main creek line contains water and the surrounding areas supports native vegetation which is in reasonably good condition. Small number of bony bream up to 230mm caught.
Waugorah Lagoon	Lagoon is low	Six large broad-shelled turtles caught in nets, also bony bream and high numbers of native carp gudgeon.
Piggery	Dry	High numbers of frogs observed on dry lake, predominantly barking marsh frogs.
Two Bridges swamp	Dry	Currently dry, with some patches of river red gum recruitment on the southern edge. Environmental water will commence once Redbank weir maintenance is complete.
Mercedes	Dry	Currently dry, with some patches of river red gum recruitment on the southern edge. Environmental water will commence once Redbank weir maintenance is complete.



Piggery Lake, November 2019 – skeletal fish remains around a small pool.

Key outcomes

There was insufficient water to monitor all indicators at all 12 Murrumbidgee MER wetland sites during November 2019. Routine wetland monitoring activities targeting water quality, fish, turtles, frogs and tadpoles were completed at seven core sites, with two additional pumped lagoons monitored in the mid-Murrumbidgee (Darlington lagoon, Mantangery lagoon). Five sites (Mercedes, Piggery Lake, Two Bridges, Sunshower, McKennas) were completely dry.

Additional sampling was undertaken at two locations along Tala Creek in the Yanga region to check for the presence of golden perch after a successful spawning and recruitment event was detected in Tala Creek following CEWO/NSW environmental water delivery in 2018-19 (Yanga and Tala Lakes floodplain watering action). Seven golden perch were captured (size range 75-180mm). A large number of bony bream (180+) and all three species of turtle (eastern long-necked turtle, broad-shelled turtle, Macquarie River turtle) were also caught.



Young-of-year golden perch captured at Tala Creek, November 2019.

Frogs and tadpoles: Six frog species were heard calling and/or observed during the November surveys. Calling activity had ceased at Redbank and Yanga wetland sites, but continued at Nimmie-Caira and mid-Murrumbidgee wetland sites. Frog observations were dominated by spotted and barking marsh frogs (*Limnodynastes* sp.), with smaller numbers of plains froglet (*Crinia parinsignifera*), and Peron's tree frogs (*Litoria peronii*). Giant banjo frogs were observed at Waugorah lagoon and both heard and observed at Nap Nap Swamp. Southern bell frogs (*Litoria raniformis*, EPBC Act listed as Vulnerable) were heard calling and

observed at Eulimbah Swamp and Nap Nap Swamp. One southern bell frog was captured in nets at Telephone Creek.

Tadpole numbers were low compared to previous years. Small numbers of early stage Perons tree frog tadpoles were captured at Nap Nap Swamp and Yarradda lagoon, and small numbers of predominantly southern bell frog tadpoles were caught at Eulimbah Swamp.

Turtle captures were higher than in September with all three species captured. Several very large broad-shelled turtles were found at Waugorah lagoon, and one broad-shelled turtle was found at Gooragool lagoon. Eastern long-necked turtles were detected at Waugorah lagoon, Avalon Dam, Darlington lagoon, Mantangery lagoon and Gooragool lagoon.



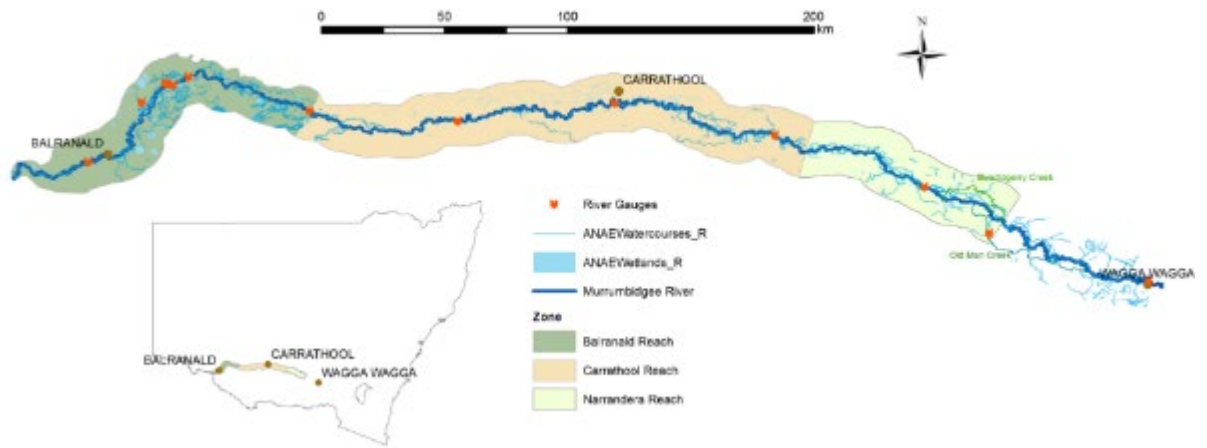
One of six large broad-shelled turtles captured at Waugorah lagoon, November 2019.

Wetland fish: Total numbers of fish caught in the wet sites were similar to November surveys in previous years. Native fish captures were dominated by carp gudgeon, which were captured in high numbers at Waugorah lagoon. Small numbers of Australian smelt and flathead gudgeon were detected at multiple wetlands. Bony bream were also detected in small-moderate numbers at Waugorah lagoon (18), Telephone Creek (18), and Eulimbah Swamp (6). A juvenile Murray cod (175mm) caught at Avalon Dam was a possible recapture of one of the two individuals first detected there during the March 2019 surveys. Moderate numbers of exotic species (European carp, goldfish, weatherloach, gambusia) were captured at all wetlands. Fish captures at Gooragool lagoon were dominated by a single large carp (650mm) and 1500+ small carp (15-25mm).

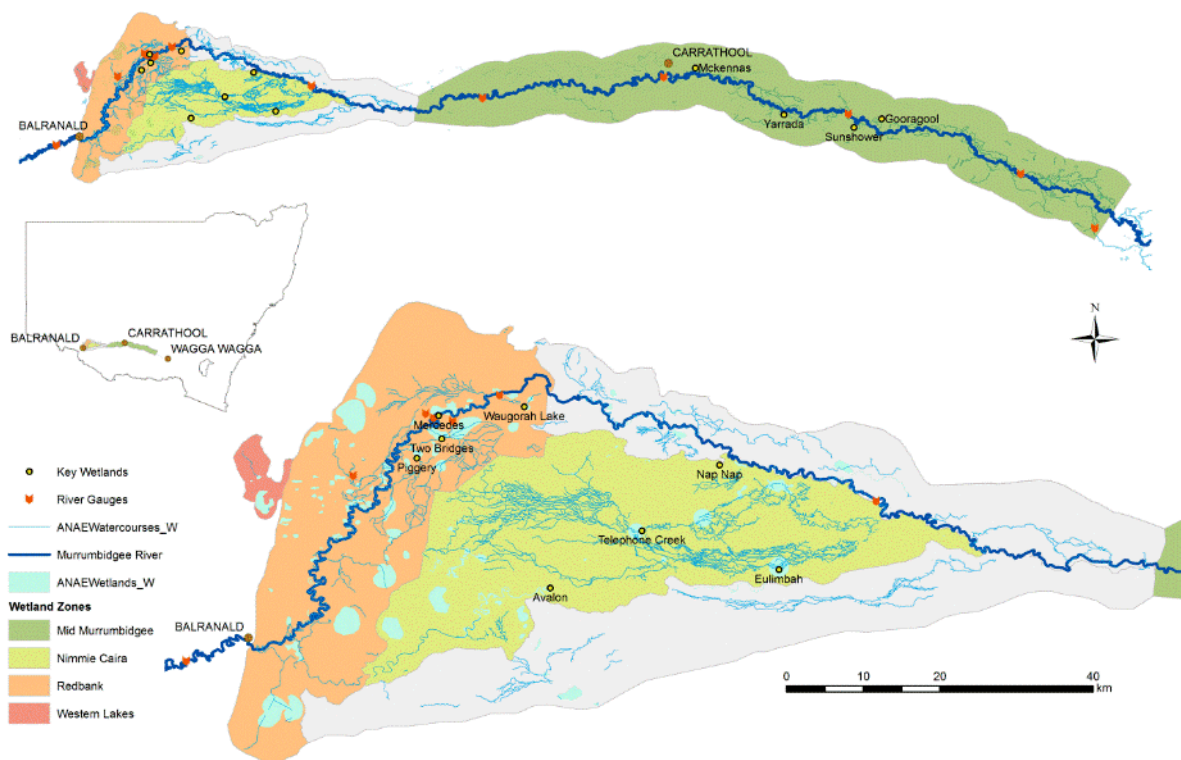


Golden perch captured in large fyke net at Mantangery Lagoon, November 2019

The next surveys are scheduled for late January 2020.



Distribution of riverine zones in the Murrumbidgee Selected Area.



Distribution of wetland zones in the Murrumbidgee Selected Area and locations of key wetlands.