

*Murrumbidgee Monitoring, Evaluation and Research Program, ecological responses to Commonwealth environmental water, Field Report. September 2020*



Setting nets at Piggery Lake, Yanga National Park, September 2020.

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## ***Ecological responses to Commonwealth environmental water in the Murrumbidgee system as of 30 September 2020***

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 birds, fish, frogs, tadpoles, water quality and vegetation diversity was undertaken at the 12 MER wetland monitoring sites in the Murrumbidgee Selected Area during September 2020. All Redbank and Gayini Nimmie-Caira wetland sites were accessible, and all except Mercedes Swamp (Redbank) held sufficient water for sampling. In the mid-Murrumbidgee two core wetland sites held sufficient water to set nets (Yarradda and Gooragool Lagoons), and, as in previous years, Mantangery Lagoon was monitored in place of McKenna's Lagoon which was dry. In addition, fish were monitored at Coonancoocabil Lagoon in place of Sunshower Lagoon, which held insufficient water to set nets. The surveys at Coonancoocabil Lagoon enabled us to obtain information on the size range and density of carp and occurrence of native fish species in a residual pool of water. Vegetation surveys were completed at all wetlands in conjunction with netting and other monitoring activities.

Weather conditions were mild with daytime temperatures between 15 - 28°C and overnight lows dropping to between 5 - 14°C. There was moderate patchy rainfall in the mid-Murrumbidgee in the days prior to monitoring and light showers (0-1mm) during the survey period.

### **Watering update**

- Mid-Murrumbidgee: Three of the four core monitoring sites were wet, although only Yarradda Lagoon held sufficient water to set nets. Mantangery Lagoon was surveyed in place of McKenna's Lagoon, which remains dry. The water level at the usual monitoring site at Gooragool Lagoon was too low to set nets, therefore monitoring was conducted closer to the connecting channel. Sunshower Lagoon held insufficient water for nets at around 30cm deep.
- Gayini Nimmie-Caira: Nap Nap Swamp and Telephone Creek are full, Avalon is around half full in the main dam, and Eulimbah Swamp is high with water extending from the main

channel back into the lignum swamp. Water was being released from Eulimbah Swamp via the Suicide Bank regulator at the time of the survey.

-Redbank (Yanga NP): Waugorah Lagoon is around 2/3 full. Two Bridges Swamp and Piggery Lake are full, and Mercedes Swamp is dry in the main swamp although water is spilling along the side channels from the 1AS regulator.

**Table 1- Site Summary**

	<b>Status</b>	<b>Notes</b>
<b>Mantangery</b>	¾ full	Small numbers of bony bream, smelt and flathead gudgeon detected.
<b>Gooragool</b>	Drying down	Low numbers of adult (600 mm+) and juvenile carp. Small numbers of flathead gudgeon and smelt also recorded.
<b>Sunshower</b>	Low (30cm)	No tadpoles recorded from seine netting. Frogs calling in low numbers.
<b>Yarradda</b>	Low	Murray cod (210 mm), 31 flathead gudgeon and small numbers of smelt detected.
<b>Coonancoocabil</b>	Low	Catch in small fykes were dominated by native carp gudgeon, five mid-size common carp (400-500 mm) were captured in large fyke nets. Broadshell and Macquarie turtles recorded.
<b>Nap Nap</b>	Full	Few fish recorded (carp gudgeon, weatherloach). Southern bell frogs calling and small number of adult frogs observed. Two grey snakes recorded.
<b>Avalon Swamp</b>	Wetland dry, dam half full	18 adult southern bell frogs observed. Small numbers of smelt and bony bream recorded.
<b>Eulimbah Swamp</b>	Channel and lignum wet	Australasian bittern heard calling. Few fish recorded (predominantly carp, carp gudgeon). Southern bell frogs calling and several observed.
<b>Telephone Creek</b>	Full	Few fish recorded. Southern bell frogs calling and one adult captured in net.
<b>Waugorah</b>	¾ full	Adult (630 mm) Murray cod and small numbers of smelt and bony bream recorded.
<b>Piggery</b>	Full	Small number of juvenile bony bream and early stage tadpoles recorded.
<b>Two Bridges</b>	Full	Few fish recorded (predominantly bony bream). Four eastern long-necked and two broad-shelled turtles detected.
<b>Mercedes</b>	Dry – water in channel from 1AS	Southern bell frogs heard calling.

### Key outcomes

Routine wetland monitoring activities targeting vegetation, water quality, fish, frogs and tadpoles were completed at twelve sites. Two sites were dry (McKenna's Lagoon and Mercedes Swamp), and one site contained insufficient water for netting (Sunshower Lagoon).



Water primrose at Two Bridges Swamp, Redbank, September 2020.



Sunset at Piggery Lake, Redbank, September 2020.

Frogs and tadpoles: Frogs were actively calling at most sites, particularly those that have recently received environmental water, including Piggery Lake and Two Bridges in Redbank, and Eulimbah Swamp, Nap Nap Swamp and Telephone Creek in Gayini Nimmie-Caira. Southern bell frogs (*Litoria raniformis*, EPBC Act listed as Vulnerable) were heard calling at multiple wetlands in Redbank (Two Bridges Swamp and behind Mercedes Swamp), and Gayini Nimmie-Caira (Eulimbah Swamp, Nap Nap Swamp and Telephone Creek). Frog call diversity was high at several wetlands with all six frog species recorded calling at Two Bridges, Mercedes Swamp, Telephone Creek and Nap Nap Swamp.

Tadpoles were captured in very small numbers at Piggery Lake. As expected, few frogs were observed active out of the water, however small numbers of southern bell frogs were observed at Eulimbah Swamp and Nap Nap Swamp and one was recorded in a net at Telephone Creek. Eighteen adult southern bell frogs were also detected at Avalon Dam, around the edge of the dam and also in residual water in the regulator culvert. Southern bell frogs were last recorded at Avalon Dam in March 2018.

Frog activity was lower in the mid-Murrumbidgee with fewer frogs actively calling, predominantly the plains froglet and spotted marsh frog, and few observations recorded.



Left: Southern bell frogs in regulator culvert at Avalon Dam, Gayini Nimmie-Caira; Right: Peron's tree frog at Yarradda Lagoon, mid-Murrumbidgee, September 2020.

Turtles: Turtles were captured in low numbers at multiple wetlands across all monitoring zones. In Redbank, most turtles were detected at Two Bridges Swamp where five eastern long-necked and one broad-shelled turtle were recorded. One broad-shelled turtle was also recorded at Waugorah Lagoon. Eastern long-necked turtles were detected at multiple sites in Gayini Nimmie-Caira (Telephone Creek, Avalon Dam and Eulimbah Swamp). One broad-shelled and one eastern long-necked turtle were recorded at Mantangery Lagoon in the mid-Murrumbidgee. Turtles were also recorded at Coonancoocabil Lagoon, where four broad-shelled turtles and two Macquarie River turtles were captured.



Macquarie River turtle captured at Coonancoocabil Lagoon in the mid-Murrumbidgee, September 2020.

Wetland fish: Total numbers of fish recorded were generally low, as expected for the cooler conditions during September monitoring. Overall, native fish captures were dominated by carp gudgeon, with smaller numbers of Australian smelt, bony bream and flathead gudgeon also recorded at multiple sites. Notably, an adult Murray cod (630 mm) was recorded at Waugorah Lagoon. Other captures at Waugorah Lagoon included carp gudgeon (1750), smelt (30) and bony bream (1). Low numbers of fish were recorded at recently filled Piggery Lake, including juvenile bony bream (5) and carp gudgeon (23). Bony bream were also detected at Two Bridges Swamp (28). Yabby numbers were notably high at Two Bridges,

including large numbers of tiny (15-20 mm) juveniles. Flathead gudgeons were recorded across all monitoring zones, including Two Bridges Swamp in Redbank, Eulimbah Swamp in Gayini Nimmie-Caira, and Mantangery Lagoon, Gooragool (channel) and Yarradda Lagoon in the mid-Murrumbidgee. As in previous surveys Yarradda Lagoon had high native fish richness, with four species recorded including a juvenile Murray cod (210 mm). Small numbers of exotic fish were also recorded at most wetlands, including common carp, goldfish, gambusia and weatherloach.

Small and large fyke nets were also deployed in a residual pool at Coonancoocabil Lagoon in the mid-Murrumbidgee. Small fykes were dominated by native carp gudgeon, and five mid-size common carp (400-500 mm) were captured in large fyke nets.



Adult Murray cod captured at Waugorah Lagoon, Redbank, September 2020.

Wetland vegetation: In Redbank and Gayini Nimmie-Caira wetland vegetation has responded well to winter rainfall and environmental water delivery. Spike rush meadows are starting to emerge at Two Bridges Swamp and numerous aquatic vegetation species were recorded at Piggery Lake, including nardoo, water primrose, pondweed and water ribbons. A new species of terrestrial plant was also recorded at McKennas Lagoon in the mid-Murrumbidgee - Australian hollyhock, with dense stands emerging around the eastern bank.

Wetland birds: Highlights included an Australasian bittern heard calling at Eulimbah Swamp, detection of a wood duck with five chicks at Sunshower lagoon and royal spoonbills observed at multiple wetlands including Gooragool Lagoon, Mercedes Swamp, Eulimbah Swamp and Avalon Dam. Great crested grebes and musk ducks were putting on some

spectacular courting displays at Piggery Lake, and a dozen white ibis and yellow billed spoonbills were recorded at Eulimbah Swamp where water levels are high. In addition, a flock of 30 plumed whistling ducks, a small flock of unidentified sandpipers and a glossy ibis were seen while driving alongside Suicide Swamp in Gayini Nimmie-Caira.



Aquatic vegetation at recently filled Piggery Lake, Redbank, September 2020.



Field team (posing on the 'Armchair Tree' at Nap Nap Swamp, September 2020 (Left to right: Anna Turner, Simone Carmichael [NPWS], Gaye Bourke).

The next monitoring trip is scheduled for mid-November 2020.