PLATYPUS MONTH 2022

Since Platypus Month began in 2014, it has grown from strength to strength. Only four surveys were conducted that first year; two at dawn on Jerrabomberra Creek and two close by on the Molonglo River Reach. Platypus Month 2022 saw us, for the second time, conduct 34 surveys, split evenly between dawn and dusk, at eight sites across the region. Such an increase in scale and frequency has enabled us to have greater confidence in the data we are collecting and to start to get a better understanding of population trends.

A few surveys were able to be conducted in 2021 but the Covid lockdown ensured we didn't get too far. While we have kept these surveys on record, we won't factor the results into our analysis given the uneven number of surveys across the sites and between years. Because of this, we decided to do a one-off, make-up set of surveys in February 2022 to give our terrific group of volunteers their platypus survey fix. Records show that the peak time to see platypus is in late winter (ie. Platypus Month), when bug numbers are getting low and males are preparing for the breeding season. There is a second spike, however, in February when the young are emerging from their burrows. We will look at these results as part of this report.



Map 1: The eight sites across the ACT region where group platypus surveys are conducted.

In 2020, when we last conducted the full 34 surveys, we saw numbers of individual platypus increase across most sites. This was following the low numbers at the height of the drought in 2019. As we are all too aware, the rain has barely stopped since 2020 with 2021 and 2022 being two of the wettest years on record.

February surveys

While February experienced rainfall well above average, most of it fell on the last day of the month. This means the majority of February experienced relatively dry, stable conditions, perfect for platypus spotting. Two dawn surveys were conducted at seven of the sites as it was thought dusk surveys would be occurring too late in the evening to suit most volunteers. The exception was the Scottsdale Bush Heritage Reserve where volunteers did their usual three dawn/three dusk surveys – because Bush Heritage don't do things in halves!

Location	Surveys	Number of Individual Rakali (Water Rat)	Number of Individual Platypus
Molonglo River below Coppins Crossing	2	1	3
Jerrabomberra Creek within Nature Reserve	2	1	2
The Sanctuary, Tidbinbilla Nature Reserve	2	1	8
Queanbeyan River, Queanbeyan	2	2	3
Murrumbidgee River, Point Hut Crossing	2	2	1
Murrumbidgee River, Scottsdale Bush Heritage Reserve	6	1	3
Murrumbidgee River, Mittagang Crossing (Near Cooma)	2	2	2
Cooma Creek, Cooma	2	0	0
Total	20	10	22

Table 1: Number of Rakali and platypus detected during the February 2022 make-up surveys. (in lieu of cancelled surveys in August 2021).

Volunteers sighted **22** individual platypus over eight 'river reach' sites across the ACT region in February. This was a positive result given the number of surveys in February was almost half the usual August survey effort. At both Queanbeyan and Molonglo River, volunteers reported sighting individuals that were noticeably smaller and could have quite possibly been juveniles emerging from the burrows. Cooma Creek was the only site not to detect any platypus during February. Ten Rakali were detected overall (Table 1).

August surveys

A total of 21 individual platypus were detected across the eight sites during Platypus Month 2022. This is ten less than were seen during August 2020. While five of the eight sites experienced the same or similar numbers to 2020, three sites saw noticeable declines. Mittagang Crossing on the Murrumbidgee River near Cooma detected only one platypus, down from four in 2020, and two platypus were detected on the Queanbeyan River, down from five in 2020. The other concerning observation was at Jerrabomberra Creek where no platypus were detected at all (three were detected in 2020). This is the first time this has happened since we started monitoring there during Platypus Month 2014.

Location	Surveys	Number of Individual Rakali (Water Rat)	Number of Individual Platypus
Molonglo River below Coppins Crossing	4	2 (2)	2 (2)
Jerrabomberra Creek within Nature Reserve	4	2 (2)	0 (3)
The Sanctuary, Tidbinbilla Nature Reserve	4	1 (0)	7 (7)
Queanbeyan River, Queanbeyan	4	1 (3)	2 (5)
Murrumbidgee River, Point Hut Crossing	4	1 (2)	4 (4)
Murrumbidgee River, Scottsdale Bush Heritage Reserve	6	2 (0)	4 (5)
Murrumbidgee River, Mittagang Crossing (Near Cooma)	4	0 (0)	1 (4)
Cooma Creek, Cooma	4	1 (0)	1 (1)
Total	34	10 (9)	21 (31)

Table 2: Number of Rakali and platypus detected during Platypus Month 2022 surveys(2020 numbers in brackets).



A platypus at Queanbeyan River during the Platypus Walk, August 2021 (photo: John Martin).

The wet weather caused all sorts of issues with the surveys in Platypus Month 2022. 120mm of rain fell over August which is almost three times the monthly average. Over half of this fell on the 4 and 5 August sending large flushes through many of the sites and seemingly causing issues with detectability and/or disruptions to regular platypus foraging behaviour. The timing of the surveys appeared to play a big part in the detectability of individuals. With heavy rain forecast for 4 August, we moved two of the Point Hut surveys to the preceding days. This appeared to pay off as four individual platypus were detected in the dawn survey on 3 August. Conversely, the first Jerrabomberra Creek survey was conducted the morning after the big rain on the 5th when a significant pulse went through the reserve (over 5,000ML/day compared to the usual baseflow of <10ML/day). As mentioned, not a single platypus was sighted there during August and only one sighting in November of two individuals has been reported since. Two individuals were detected in the next two surveys. Interestingly, many locals taking their morning walks helpfully informed us that they hadn't seen any since the big flows on the 4/5th and 'it usually takes two weeks before you see them again'. Sure enough, we detected two platypus again just over two weeks later at our final survey for the month.

Figure 1 shows surveys conducted at three sites (Point Hut Crossing, Jerrabomberra Creek and the Queanbeyan River) over the past three years, with the number of individual platypus detected and the flow from nearby gauges. While 2019 was a dry year and numbers were down across the board, numbers improved in 2020 as heavy rain didn't disrupt surveys with high flows to the same degree as 2022. This was mainly due to the landscape still soaking up much of the rain (or filling up dams in the case of Googong, on the Queanbeyan River). One exception is Point Hut in 2020 where you can see high flows coincided with two surveys where zero platypus were detected.



Figure 1: Sightings at three Platypus Month survey sites vs flow over three years. Dots represent surveys

So it appears that high flows may be causing issues with the detectability and/or creating disruptions to regular platypus foraging behaviour. The argument of detectability isn't supported at Jerrabomberra Creek or Queanbeyan River as flows went back to normal levels relatively quickly and yet no platypus were sighted for at least two more surveys, if at all. Having spoken with experts about this, no one is sure what is happening to platypus during these high flow events. They are certainly capable of handling high river levels, having been observed negotiating them with apparent ease. There is also no evidence to support the theory that they are staying in their burrows for an extended period following high flows. The consensus seems to be that they simply spread out further to forage with the increased available habitat. In most cases, they appear to return to normal foraging behaviours after a couple of weeks but, alas, this does not currently appear to be the case in Jerrabomberra Creek. We will keep observing this site with interest and ask people to add any sightings from there to the <u>Platy and Ratty Portal</u>.

The persistent flows have continued to have a positive effect of the condition of our rivers, with the <u>Waterwatch Catchment Health Indicator (CHIP)</u> scores indicating an improvement particularly in our larger river systems. That said, the ash and sediment from the 2019/20 fires is still evident covering the rocks and smothering waterbug habitat and it continues to be remobilised in the water column after significant flows. Staff from Scottsdale Bush Heritage reserve, which was directly impacted by the fires, believe that the platypus population has not been as prevalent since the fires. Ongoing monitoring of this population will be important to determine how they have weathered the impacts. The Scottsdale volunteers were also treated to a very different climatic event when they conducted a survey in the snow in late August (see picture following page)! This occurred during their most successful August survey with four individuals observed! Two Rakali were also observed at Scottsdale which was a pleasing result after not detecting any in 2020.

Mark Recapture surveys

Waterwatch are continuing to work towards strengthening the methods for collecting platypus data so that it can be used to better gauge the status of platypus populations in the ACT region. As part of this, we worked with ecologists from the University of Canberra in 2022 to undertake some mark and recapture surveys. Mark and recapture is a method used to estimate the size of a population when it is impractical to count every individual. The ecologists capture the platypus in fyke nets and then insert an identification tag in them so they can be scanned for an individual code if caught again. The platypus are also sexed and the amount of fat in their tail is measured as a way of gauging their condition.

Unfortunately, the high river flows caused issues with this method too! Only three individuals were captured from nine surveys over three sites. This illustrates that the different methods for collecting data on platypus can all have their limitations and having a mixture of approaches is the best way to gain an understanding of a population. Perhaps we will look at doing this study again once the La Nina has passed.

Location	Platypus Month Surveys	# Individual Platypus (PM)	Mark Recapture Surveys	# Individual Platypus (MR)
Molonglo River below Coppins Crossing	4	2	3	1
Murrumbidgee River, Point Hut Crossing	4	4	3	2
Murrumbidgee River, Scottsdale Bush Heritage Reserve	6	4	3	0
Total	14	10	9	3

Table 3: Number of individual platypus detected in Platypus Month surveys at three sites vs number of platypus captured using fyke nets.



Platypus surveys are not for the faint-hearted! Volunteers at Scottsdale Bush Heritage Reserve, August 2022 (photo: Phil Palmer).



Platypus near Butters Bridge on the Molonglo River during the February surveys (photo: Tom Tyrell).

If you are keen to do more platypus data collecting between now and next August, we still have sites available that you can adopt to conduct your own surveys all year round. These can be located on the Australian Platypus Conservancy's (APC) <u>Australian Platypus Monitoring Network</u> page. The sites overlap with our survey areas and are aimed at gaining a better understanding of platypus numbers over the course of the year (ie. beyond Platypus Month). This suits people who would regularly visit these areas and can look for platypus there preferably once or twice a week (can be less frequent) for around ten minutes at a time. The more people signing up to a site the better, as this will increase the number of data points for that site and improve confidence in the data. I urge you to get in touch with us if you think you may be interested and we're happy to talk through what is involved. Go to 'View Findings' on the APMN homepage to see the sites and contact <u>Waterwatch</u> or <u>Geoff Williams</u> (APC).

Thanks again to staff at Scottsdale Bush Heritage Reserve and at Tidbinbilla Nature Reserve who collaborated with Waterwatch to conduct 10 of the 34 group surveys this August (and eight in February). This adds valuable data to the mix that Waterwatch would not otherwise have the capacity to collect.

Waterwatch also receives funding through ACT Government and Icon Water. Many thanks to both these funding sources that enable Waterwatch to monitor platypus on a broader, catchment scale. The Platypus Month surveys are conducted on Ngunnawal and Ngarigo country and Waterwatch acknowledge the continued connection that the traditional owners have to these lands.

And finally, thank you to the volunteers for your support and interest. Know that Waterwatch will continue to work hard to raise awareness and increase our understanding of platypus (and Rakali) in the region. We couldn't do it without you.