

# Platypus News & Views



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*Newsletter of the Australian Platypus Conservancy (Issue 79 – February 2020)*

## IS THE PLATYPUS ON THE BRINK OF EXTINCTION?

Earlier this year, the University of New South Wales issued a press release with the alarming heading PLATYPUS ON BRINK OF EXTINCTION. Unsurprisingly, the news was picked up and repeated globally by both social media and traditional media outlets. In Australia, these included respected sources such as ABC News and *The Age* and *Sydney Morning Herald* newspapers.

But what are the actual facts behind the sensational headline?

The media release was based on a study that used computer modelling to predict the combined effects of habitat degradation, extreme drought events and habitat fragmentation caused by dams on the platypus's distribution and abundance.

The results suggested that these factors have caused platypus numbers to drop substantially in the last 200 years, resulting in a current estimated total population size of between 128,000 and 172,000 animals. When presumed future effects of climate change on drought frequency and duration are also factored in, predicted population size drops further (to possibly fewer than 87,000 animals by the year 2070).

Computer models are of course statistical constructs – their reliability is necessarily limited by the accuracy and strength of the assumptions and numerical values used to create them.

For example, in the case of the UNSW platypus modelling, one obvious weakness is that the model assumes that dams that are more than 5 metres tall serve as a barrier to platypus movement and thereby greatly reduce dispersal. Due to the prevalence of dams measuring 5 metres or more in height across the platypus's range, this assumption had a major impact on estimated numbers, with the model predicting that habitat fragmentation has caused a 50% decline in population size across 39% of the species' range.

The problem with this finding is that studies have shown that platypus routinely travel back and forth past a dam measuring nearly 6 metres high at Belgrave Lake near Melbourne. Furthermore, although no one has ever investigated how big a dam has to be to hinder platypus dispersal to the point that it jeopardises population survival, it *is* known that the animals can and do successfully move both upstream and downstream past formidable natural barriers such as Mackenzie Falls (measuring more than 20 metres high) in Grampians National Park in Victoria.

Furthermore, there's plenty of evidence that platypus readily make use of fish ladders, which are increasingly being installed across the platypus's range to assist fish passage around in-stream barriers such as dam walls.

Based on this (and other) limitations, it's reasonable to conclude that the recent UNSW modelling, while interesting, does not convincingly demonstrate that the platypus is doomed. Apart from anything else, it predicts that overall platypus population size under climate change will still comprise between 86,696 and 158,289 animals in 2070 – or around 8 to 16 times the number that potentially qualifies a species to be declared vulnerable to extinction under current IUCN rules.

## LOOKING OUT FOR WERRIBEE RIVER'S PLATYPUS

Though the platypus's conservation status is rightly regarded as Near Threatened on a national basis, the status of many local populations remains very unclear.

In this context, the recently launched Bacchus Marsh Platypus Alliance (BMPA) provides a good model for how a volunteer group can work successfully to help map where local animals occur and at the same time raise awareness of platypus conservation issues – in this case, along the Werribee River just west of Melbourne.

The Werribee River is a small river system embedded in a dry landscape – median annual rainfall since 1990 at Bacchus Marsh has been around 567 millimetres. Much of its surrounding catchment has been developed for agriculture, with many orchards and market gardens irrigated by water from the Werribee River. Meanwhile, the human population in the Werribee valley is growing rapidly, potentially increasing direct risks to the platypus occupying nearby stretches of river – in recent years, many animals have died in illegal yabby traps or after becoming entangled in litter (see photo at right).



The status of platypus in the Werribee River remains poorly understood. Although annual platypus surveys were carried out from 2008 through 2017 as part of the Melbourne Water Urban Platypus Program, most of this work repeatedly sampled less than 7 kilometres of the river in Werribee township. In addition, a few surveys were conducted farther upstream near Bacchus Marsh and Ballan, with just a handful of sites sampled elsewhere.

Interestingly, the frequency of female captures has been found to outnumber male captures both in Werribee township and farther upstream, which normally indicates that a platypus population is healthy and productive. Assuming that capture frequency (calculated as the average number of adults and subadults recorded overnight per site) reliably reflects population density, the results also indicate that platypus are at least four times more abundant in Werribee township as compared to elsewhere along the river.

A recent summary of where platypus DNA has been detected in samples of river water paints a somewhat different picture, with only 33% site occupancy recorded in the lower Werribee River (including Werribee township) as compared to 50% occupancy of sites located farther upstream in the middle Werribee (including Bacchus Marsh and Ballan).

The best available evidence suggests that sightings records can actually be a more effective method than either DNA or netting studies to detect platypus in places where they occur in relatively low numbers.

To improve understanding of the status of platypus in the Bacchus Marsh area, BMPA has been encouraging local residents to report when and where they have seen a platypus. This has resulted in a very impressive 11 new sightings logged since 2016. By comparison, only one animal has been detected in the Bacchus Marsh area through live-trapping in the last decade.

Anyone wishing to set up an effective program for detecting and recording platypus sightings made by local community members is encouraged to contact the Australian Platypus Conservancy for advice – we're very happy to help.

## WHAT TO DO WITH A DEAD PLATYPUS

A great deal remains to be learned about platypus mortality factors. A dead platypus is therefore of great interest to biologists and wildlife veterinarians, particularly now when so many waterways in eastern Australia are recovering from drought and bushfire. So, what should you do if you happen to discover a deceased platypus?

First, if you find a freshly dead platypus, please contact us (the APC) as soon as possible by phone (03 5416 1478 or 0419 595939) or email ([platypus.apc@westnet.com.au](mailto:platypus.apc@westnet.com.au)) so we can arrange to have the carcass picked up for a thorough post mortem examination if this appears to be warranted. However, if the body is clearly starting to decompose, careful photographic documentation may actually be of greater value than saving the body for an autopsy.

Meanwhile, secure the body if possible – if it's left in place outside (especially overnight) it may well be carried off by a fox or some other scavenger. If the body is reasonably fresh, ideally place it inside a sealed plastic bag and store it in a cold place (preferably a refrigerator rather than a freezer). Of course, always adopt sensible precautions to avoid the risk of possible infection when handling the carcass – wear disposable rubber or plastic gloves if these are available and thoroughly wash your hands afterwards.

For all dead platypus, recording the following details will be particularly worthwhile:

- Where the body was found (latitude and longitude, plus its location in relation to the nearest water body)
- Date when the body was discovered
- Description of any injuries or other clues at the site that suggest the cause of death
- The animal's sex (see comments below)
- The animal's approximate length (bill tip to tail tip)

In addition, providing photographic documentation of the following images will be of value:

- The whole body in the position in which it was found (with something to indicate scale)
- Close-up views of the inner hind ankles (to establish the animal's sex and possibly age)
- Bottom view of the tail (to help assess body condition)
- Any apparent injuries or other features (such as litter around the body, bite marks) that may help to confirm the cause of death

### *MALE OR FEMALE?*

Males can be distinguished from females by the presence (in males only) of a conspicuous sharp spur, about the size and shape of a dog's canine tooth, on each inner hind ankle. The spurs of juvenile males are covered by a whitish layer of protective material when they first emerge from a nursery burrow (upper photo). This layer gradually chips away (starting at the spur tip), to reveal the narrower true spur by the time a male is about one year old.



Second-year males can be distinguished from older males by the occurrence of a band of skin around the spur base (lower photo). This gradually retracts and becomes much narrower by the time a male is three years old.



Although females lack true spurs, juvenile females may have a small, hard, pointed nub (white or brown in colour, just 1-4 mm long) in the same place where male spurs are found. These are normally shed by the age of about 9 months, leaving a small shallow pit in older females.

## **APMN TOP HOT SPOT**

Last year the APC officially launched its next-generation citizen science program, the Australian Platypus Monitoring Network (see *PN&V* No. 74). Among the sites now being monitored, Founders Lake at the Tasmanian Arboretum (near Devonport, see photo at right) currently holds the honour of being the most productive single site to see a platypus, with a remarkable 3.5 animals recorded on average in a given 5-minute standard scan period. Up to six different animals have been observed feeding in Founders Lake at the same time – a figure that we might have queried if we hadn't had the privilege of seeing a comparable number of animals feeding there last October (see *PN&V* No. 78).

For more information about how you can start to contribute to platypus monitoring through APMN, please visit the APMN website at [www.platypusnetwork.org.au](http://www.platypusnetwork.org.au).



## **TOWARDS A NATIONAL BAN ON OPERA HOUSE TRAPS**

Since Victoria banned the use of opera house yabby traps in July 2019 there has been a huge reduction in the number of platypus and rakali found drowned in traps, with only one fatality recorded state-wide since the ban came into effect. We're also pleased to report that Australia's commonwealth, state and territory Environment Ministers issued an Agreed Statement in November 2019 that they intend to pursue a nationally consistent approach to address the "negative impacts that opera house yabby nets have on Australia's native wildlife, in particular on platypus". This move was initiated by ACT Minister Mick Gentleman, who has been effective in legislating a ban on use of enclosed yabby traps in the ACT.

Although no time frame was specified in the November announcement, it is hoped that New South Wales will now feel empowered to announce a firm implementation date for its proposed phasing out of opera house traps and that the remaining jurisdictions – Queensland, South Australia and Northern Territory – will also initiate positive action to ban use of these death-traps in their waterways.

## **FORTHCOMING APC PLATYPUS AND RAKALI EVENTS**

*Sunday 15 March* – Platypus and rakali workshop, hosted by Friends of Campbells Creek. Bookings (*wait list only*): see link on Facebook: Australian Platypus Conservancy (Official)

*Wednesday 8 April* – Platypus talk, hosted by Bendigo Fields Naturalists Club. Bookings: [info@bendigofieldnaturalists.asn.au](mailto:info@bendigofieldnaturalists.asn.au)

*Sunday 26 April* – Rakali talk, hosted by Blackburn Lake Sanctuary. Bookings: see link on Facebook: Australian Platypus Conservancy (Official)

**Australian Platypus Conservancy**



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