Platypus News & Views

Newsletter of the Australian Platypus Conservancy (Issue 92 – August 2023)

IN-STREAM BARRIERS AND THE PLATYPUS

Given that platypus populations have had to cope with natural in-stream barriers for millions of years, it's not surprising that these animals will sometimes leave the water to do so. For example, two adult males marked with microchip tags in studies commissioned by the Wimmera CMA in western Victoria have been captured at sites above and below Mackenzie Falls (shown at right). These falls rise more than 30 metres and are undoubtedly too steep to be scaled directly by a platypus. However, the neighbouring slope as seen in the photo should provide quite a straightforward path for a platypus to scramble past the barrier.

(Photo credit: APC)

In the last 200 years, humans have created many additional in-stream barriers across the platypus's range, often in the form of steeply stepped road culverts or vertical weir walls. Although some of these structures can apparently be bypassed by a platypus walking around them in the same way as Mackenzie Falls (see *PN&V* no. 79), forcing a platypus to leave the water and travel across land will increase the risk that the animal is injured or killed by a predator such as a fox, or potentially hit by a car as it walks around a road culvert.

A genetic study published last year by scientists from the University of New South Wales and elsewhere has also made the strongest case to date that large dams may be significant barriers to platypus migration and dispersal: animals living upstream or downstream of major weir walls (72 to 180 metres high) were found to be genetically more different than those occupying undammed segments of river channel, with the amount of genetic differentiation apparently increasing over time. Although there was no evidence that the weirs were associated with increased levels of inbreeding, this could conceivably change in the future.

Perhaps even more importantly, restricting longitudinal travel along a water course may in many cases reduce the platypus's ability to access critically important refuge areas (for example, when parts of the channel dry up during drought or fill with sediment after post-fire flooding). In addition, the presence of major barriers may sometimes make it harder for suitable vacant habitat to be recolonised when environmental conditions improve. Both factors are in turn expected to contribute to the risk that a platypus population could decline over time and eventually disappear from a river system.

Are there any practical steps that can be taken to encourage successful platypus travel – particularly by dispersing juveniles or individuals displaced by drought or other catastrophic events – around existing large weirs?

(cont. on page 2)

IN-STREAM BARRIERS AND THE PLATYPUS *(cont. from page 1)*

A recent report – funded by the Commonwealth Regional Bushfire Recovery Program and jointly co-authored by Melody Serena (APC) and Diane Crowther and Adrian Kitchingman (Arthur Rylah Institute for Environmental Research) - begins to address this question by looking at a representative range of Victorian weirs from a platypus's point of view, identifying features that are likely to impede platypus passage, and suggesting ways to fix or at least reduce the problem.

In many cases, the key underlying issue is that the platypus is a short-legged animal that is physically unable to climb a step rising more than about 20 cm – and quite possibly even less in the case of small dispersing juveniles. Vertical surfaces are an even more intractable barrier when a platypus is in the water, given that it cannot reach up to any significant extent while swimming.

In some cases (for example, the steeply sloping section of spillway channel shown at top right), consideration could be given to assisting animals seeking to move upstream by scoring horizontal grooves across the slope to improve traction. This should also promote safer and easier travel by a platypus walking downstream along the spillway when the channel is dry.

In cases where one or more vertical steps occur along a spillway channel (as shown at middle right), one potential way to assist longitudinal travel would be to add appropriately engineered ramped surfaces within the spillway so a platypus can ascend or descend each step. Alternatively, it may be possible to create a route for a platypus to climb out of the spillway and access the adjoining vegetated slope in order to bypass the steps entirely.

In yet other cases where a reasonably easy route may already exist for a platypus to exit the channel and bypass a barrier (as shown at bottom right), associated predation risk can potentially be reduced by ensuring that plenty of protective cover is available in the form of low-to-medium shrubs, sizable grass tussocks, strategically placed logs, etc. To provide genuine benefit to a dispersing platypus while not unduly compromising human access, these materials may best be placed in a strategic fashion along the outer edge of the spillway, starting near the point where a platypus is most likely to leave the water.

(Photo credits: APC)

The report also identifies the subset of large Victorian weirs that are most likely to contribute to platypus population fragmentation based on their location in the landscape, and identifies major knowledge gaps and priority research areas to validate and build on the report's findings.

The report, published as ARI Technical Report no. 361, can be accessed online at: https://www.ari.vic.gov.au/__data/assets/pdf_file/0026/662921/ARI-Technical-Report-361-Barriers-to-platypus-dispersal.pdf

A COMMUNITY EFFORT FOR LORNE'S PLATYPUS

An enthusiastic group of citizen scientists is providing crucial information needed to monitor and protect the platypus population in the St George River (below right), near Lorne in coastal Victoria. The St George is one of many small independent river systems flowing south from the Otway Ranges – a region generally considered to be a platypus stronghold due to its reliable rainfall and often dense streamside vegetation. Nonetheless, the small size of these water courses means that their platypus populations remain very vulnerable to habitat disturbance and unsympathetic surface water management.

Community-based platypus monitoring in the St George River began in early 2021, facilitated by the APC's Australian Platypus Monitoring Network. APMN volunteers scan the water at fixed monitoring sites for standard 5-minute intervals and record the number of animals seen, including when no sightings occur. This information is uploaded to the APMN website, which calculates the mean (or average) number of platypus sightings recorded over time. Platypus activity can then be compared between different sites or tracked from one year to the next at a given site.

Based on over 700 site-visits to the group's main monitoring location (~3 km upstream of the river's outlet), a platypus has been sighted in nearly half of all scans conducted from 2021 to 2023 (mean sightings/scan = 0.45). Platypus sightings in summer are on average slightly more numerous than in other seasons, presumably because lactating females often continue to feed well into daylight hours. To provide additional insight into the species' status, platypus monitoring has recently commenced at a second APMN site located about half a kilometre downstream of the first.

The Lorne platypus monitoring group exemplifies how community members can work together to provide information needed to help conserve a local platypus population. By sharing monitoring duties, the group easily achieves 20 or more scans per seasonal quarter - enough to support meaningful analysis of how platypus activity varies through time. It also means that monitoring effort is maintained even when some members are ill or away.

The proximity of the St George River to Lorne means that its platypus population will potentially come under pressure from increased human disturbance and water demands in future. Allen Reservoir, located on the river's headwaters, is currently Lorne's only source of potable drinking water. Planning is also underway to complete the Great Ocean Road Coastal Trail, with one option being for this to incorporate an existing track along the St George River. The Allenvale Mill Campground operated by Parks Victoria is also located nearby. Happily, the Lorne group is now well placed to contribute in an informed and proactive manner to decisions that can potentially affect the platypus's status in their area.

APC biologists have been invited by the Lorne group to meet with them in spring to discuss the group's latest observations and findings. As part of that trip, the Conservancy will present a free platypus information session on Saturday 7 October (starting at 5 pm) at Lorne Community House. Among other topics, the session will describe how best to spot a platypus in the wild and how persons can contribute to platypus monitoring along the St George River or elsewhere. Places are limited, so please register your interest in attending by sending an email to platypus.apc@westnet.com.au. For more information about the Australian Platypus Monitoring Network, please visit the APMN website at www.platypusnetwork.org.au.

SOUTH AUSTRALIA BANS OPERA HOUSE TRAPS

Use of opera house yabby traps by recreational (as well as commercial) fishers has recently been banned in South Australia, taking effect from 1 July 2023. This action aims to protect a suite of air-breathing aquatic animals including platypus, rakali (or Australian water-rats) and freshwater turtles from drowning.

Use of deadly enclosed yabby and cray traps has previously been banned (or never been permitted in the first place) in Victoria, New South Wales, the Australian Capital Territory, Tasmania and Western Australia. However, Queensland still allows usage (subject to some restrictions) as does the Northern Territory. Queensland has supposedly been considering a full ban for some years, but little apparent progress has been made towards action.

Australia's commonwealth, state and territory Environment Ministers issued a formal Agreed Statement in November 2019 that they intended 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'.

Given that nearly all states and territories now have legal bans in place, it's clearly time that both Queensland and the Northern Territory step up and end the use of enclosed yabby traps once and for all across Australia.

PLATYPUS IN THE GALLERY

In Victoria, the platypus has been the subject of a large riverside sculpture at Axedale by Yvonne George, and murals painted on a grain silo at Rochester and an aquatic centre at Bacchus Marsh by artists Jimmy Dvate and Lukas Kasper, respectively. In Tasmania, Jimmy Dvate has also painted a large public platypus mural on a wall in South Hobart. However, the platypus has to date made few formal appearances in major art galleries.

That's about to change with stunning platypus sculptures made by Japanese-born Taro Iiyama from recycled cardboard featuring in a forthcoming exhibition of this artist's work at the Benalla Art Gallery in Victoria, opening on Friday 15 September. To mark the exhibition's conclusion, the APC will give a community talk about the platypus and its conservation needs at the gallery on Sunday 12 November starting at 3 pm.

Admission is free but bookings are essential – please telephone (03) 5760 2619 or email gallery@benalla.vic.gov.au.

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