

Platypus News & Views



Newsletter of the Australian Platypus Conservancy (Issue 97 – November 2024)

PLATYPUS MORTALITY FACTORS – AND HOW TO ADDRESS THEM

What factors are most likely to contribute directly to platypus mortality in the wild? To help answer this question, Conservancy staff have been recording details of platypus deaths reported to us by field biologists, veterinarians, persons involved in wildlife rescue and general members of the public for more than three decades.

A paper has just been accepted for publication in *Australian Mammalogy*, based on an analysis of 391 mortality records with an identifiable cause reported to the APC from 1989–2024. Details of 18 cases in which an injured, sick or orphaned platypus was brought to Healesville Sanctuary for veterinary care from 2005–2024 and later died are also included, courtesy of Healesville's Dr Jessica Thomas (one of the paper's co-authors).

Many (13%) of the platypus mortalities recorded by the APC were due to predators, with Sanctuary vets concluding that four individuals had been injured in this manner. Although foxes were deemed to be the main culprits in our study, previous records confirm that a platypus may be killed by domesticated and wild dogs and native carnivores such as carpet python *Morelia spilota*, spotted-tail quoll *Dasyurus maculatus* and large birds of prey.

A platypus is likely to be most vulnerable to predation when it travels through shallow water or across dry land. Dog owners can do their part to protect this species from harm by keeping pets on leads near platypus habitats, particularly near dawn or dusk when a platypus is most likely to enter or leave a burrow. In addition, activities that encourage overhanging shrubs or tall tussock grasses to grow along creeks and rivers will both reduce platypus predation risk (by providing essential cover) and contribute to healthier populations of aquatic insects – the platypus's main food supply.

Litter and inappropriate angling practices were together responsible for 15% of platypus mortalities recorded by the APC, and four badly injured animals being taken to the Sanctuary. The truly dire outcomes of platypus litter entanglement have previously been highlighted in *Platypus News & Views* (most recently, see issues 76, 84 and 86). The problem arises because a platypus mainly feeds at the bottom of water courses – precisely where litter tends to accumulate. To make matters worse, the specialised nature of a platypus's front feet means that it is effectively incapable of gripping and removing a loop or ring that has ended up around its neck or body.



Photo: APC

Encircling litter rubs against and eventually cuts deeply into a platypus's skin and underlying tissues. Virtually any plastic, rubber or metal ring or loop measuring up to around 24 cm in circumference can be a problem, with injuries or deaths known to have been caused by engine gaskets, cable-ties, tamper-proof food jar rings, a hospital identification wristband, a child's plastic bracelet, a knotted loop of twine, the rim from a bicycle headlamp and (very often) elastic hair-ties – the three shown above were responsible for the agonising death of a juvenile female.

(cont. on page 2)

PLATYPUS MORTALITY FACTORS (cont. from p. 1)

Photo: S. Byass

We are confident that the vast majority of anglers wouldn't dream of ever harming or killing a platypus. Nonetheless, discarded loops of snarled fishing line are one of the most pernicious types of litter encountered by this animal, especially in relatively undisturbed creeks or rivers where platypus numbers can be quite high. A platypus may also be accidentally snagged by a fishing hook as a line is being reeled in, most often in the front foot or bill (as seen at right).



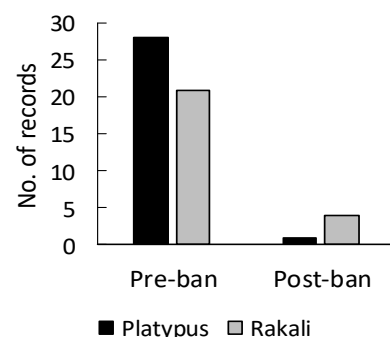
The presence of an embedded hook is clearly going to be a serious and painful problem for a platypus. The likelihood of an unpleasant death is further compounded if the line is then cut. Loose line trailing from a hook can easily get tangled around a branch or other structure in the channel, causing the platypus to drown (if it can't reach the surface to breathe) or eventually die of exhaustion (if it can).

Placing litter traps in stormwater drainage channels and organising litter clean-up campaigns can help to reduce the risk that a platypus dies horribly after encountering rubbish. However, the ultimate solution to platypus litter entanglement lies mainly with the community – everyone needs to be mindful to not drop litter in the first place, to retrieve particularly dangerous items such as elastic hair-ties dropped by others, and to cut through all closed loops or rings before disposing of them responsibly. With the summer holidays fast approaching, another useful habit will be to avoid wearing hair-ties when swimming, so they can't be lost in the water.

Likewise, platypus mortality arising from recreational angling could largely be eliminated if all anglers would make it their habit to retrieve snarled line and to stop fishing temporarily (or move a short distance upstream or downstream) when a platypus appears nearby.

More than half of all APC platypus mortality records (55%) were due to animals drowning in fishing nets (including mesh gill nets, fyke nets and drum nets) or enclosed yabby and cray traps (mainly opera house traps, though also homemade equivalents). This partly reflects the fact that several animals often die in incidents involving fishing gear, particularly when multiple traps are deployed or a net or trap is abandoned in the water (so-called 'ghost fishing').

Does legislation banning use of dangerous fishing gear help to protect platypus (as well as rakali) populations, even in jurisdictions where some restrictions on use may already apply? The answer is unequivocally yes. For example, the graph at right compares the number of platypus and rakali deaths in opera house traps in the 5 years before and after these traps were completely banned in Victoria. The number of animals found dead in traps was reduced 10-fold after the ban came into effect, and presumably will continue to drop over time as any remaining nets deteriorate and are thrown away.



Queensland and the Northern Territory are the only state or internal territorial governments in Australia that still allow opera house traps to be legally deployed within their borders. On behalf of rakali populations as well as platypus, we strongly urge both governments to enact a blanket ban on use of these and other enclosed yabby traps as a matter of priority.

The paper describing these and other findings concerning platypus mortality should be available soon on the *Australian Mammalogy* website as an Open Access publication. A direct link to the paper will also be included in the next issue of *Platypus News & Views*.

THE TAIL TELLS A TALE - A TIP FOR “AUSSIE OTTER” SPOTTERS

The white-tipped tail of a rakali (a.k.a. Australian water-rat or *Hydromys chrysogaster*) is often cited as a distinctive feature that can be used to help distinguish this species from a platypus. However, given how much natural variation is known to occur in rakali fur colour – from virtually black to very pale – we thought you might be interested to learn what proportion of a rakali’s tail is actually likely to be white.

As a starting point, we selected 63 photos of rakali (including 14 dead individuals) shared with the Conservancy since 2014 in which the full length of the tail was visible or could be inferred with reasonable accuracy. After enlarging each image to its full-screen size on a desktop computer, we then used an online ruler to estimate how much of each tail was white.

The longest white tip – comprising an estimated 58% of total tail length - was seen on an animal found dead near Wilsons River in Lismore, New South Wales (shown below at left). The shortest white tip – comprising just 9% of total tail length – was seen on a very light-coloured rakali recorded in Nockburra Creek, not far from the Murray River at Overland Corner in South Australia (tail tip circled in red, below at right).



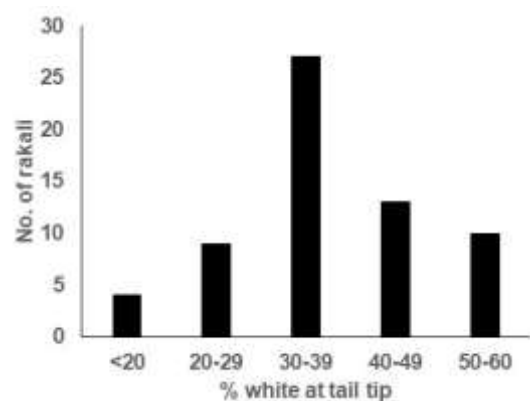
Photo: Mark Harris



Photo: Alan Woods

As shown in the graph at right, nearly 80% of animals had tails in which roughly one-third or more of total length was white. In contrast, only 6% had tails in which less than one-fifth of total length was white.

We conclude that looking for a white tail tip is likely to provide extremely useful (though not infallible) evidence concerning whether a rakali or a platypus has been seen in the wild. Due caution is particularly warranted if an animal is fairly far away or observed in poor light.



Why are rakali normally born with a conspicuous white tail tip? The short answer is that no one knows for sure. One possible explanation is that it serves as a sacrificial target for predators. In other words, the disadvantage of having a white-tipped tail that is more easily seen, especially at night, is outweighed by the advantage of having a predator focus on the tail tip when pouncing. Light-coloured tail tips may also work as flags helping a mother and her offspring to stay together when they forage as a group outside the burrow – possibly a very vulnerable period in the youngsters’ development.

Although rakali continue to be widely distributed, much remains to be learned about how this species responds to environmental disturbance due to human activities or factors such as drought. Therefore, if you *do* happen to spot a rakali anywhere in the wild, please consider reporting the salient details (when, where and how many animals were seen) to the APC at <https://platypus.asn.au/report-a-sighting/>.

NEW GUIDE AVAILABLE TO IDENTIFY PLATYPUS SEX AND AGE

Being able to identify an animal's sex and age class is often needed for research purposes or to assess how well a wild population is doing.

Unfortunately, the criteria most commonly used to assign sex in mammals simply don't apply to the platypus. For example, along with just a handful of other mammalian species (notably elephants and whales), a male platypus's testes are tucked away inside his abdomen. Furthermore, nipples aren't present in either a male or female platypus – though females can produce milk, this is released to two furry skin patches through special pores which are not themselves visible. Both sexes are the same colour and have the same markings and – though males are generally larger than females at any given location – a large adult female is often about the size of a small subadult male.

The good news is that a male platypus has a prominent sharp spur on each inner hind ankle. Spur appearance changes with age, beginning with relatively stubby white structures in the weeks after a male first emerges from a nesting burrow (as shown at right). Spur maturation enables three male age classes to be identified quite reliably, including juveniles (less than one year old), second-year subadults, and fully mature adults (two years old or more). In contrast to males, first-year females have a tiny pointed structure on each hind ankle. These normally drop off before a female's first birthday, leaving a narrow pit to mark the spot.



Photo: APC

A paper detailing how spurs change with age has recently been published in *Australian Mammalogy*. Co-authored by Tom Grant, Peter Temple-Smith, and Melody Serena and Geoff Williams from the APC, it features large colour photos and is meant to be a user-friendly guide for veterinarians, wildlife carers and interested members of the public as well as field biologists. It can be accessed free of charge at: <https://www.publish.csiro.au/AM/AM24020>.

HELP NEEDED FOR A PLATYPUS STUDY

A very interesting and worthwhile study in Victoria is currently examining the level of pollutants (such as heavy metals and pesticides) found in platypus tissues. The research is being conducted by Adele Romagnano, a PhD candidate working with the Aquatic Environmental Stress Research Group (AQUEST) at RMIT University. Adele hopes to gain information from as many different sites as possible across Victoria, and for that she needs your help. Specifically, she would love to hear from anyone who encounters a platypus carcass in coming months anywhere in Victoria - particularly if it's relatively fresh – to provide material for analysis. If you do happen to find a dead platypus or hear that one has been found, please consider ringing Adele ASAP on 0423 768 960 so she can arrange to collect the carcass if it sounds suitable. Alternatively, if you get in touch with the APC, we'll pass your information on to Adele as a matter of urgency. Many thanks in advance!



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