

Ripples

Newsletter of the **AUSTRALIAN PLATYPUS CONSERVANCY**

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FIRES, FLOODS AND PLATYPUS

In theory, floods could either have a positive or negative impact on platypus populations, depending on their severity and duration.

For example, positive effects could arise if accumulated silt is washed away to reveal a more diverse channel substrate, or the quality of platypus habitat is improved by logs and large branches that are carried down and left in the channel. However, populations could also be harmed if young platypus drown in their nursery burrows, or stream and river habitats are degraded by erosion.

In practice, very little is known about how flooding actually affects this species, either directly or over the longer term.

As reported in *Ripples* 30, the capture rate for juveniles around Melbourne dropped sharply in 2005 after streams and rivers flooded in early February—the time of year when most baby platypus are old enough to leave the burrow, but are still quite small and weak. Little change was noted in the corresponding adult and subadult capture rates, suggesting that size and strength may help this species cope with flood waters.

Similarly, along the Shoalhaven River in New South Wales, juveniles failed to be captured in surveys conducted after floods occurred in late December and January, despite the fact that half of all adult females had been found to be lactating (and hence caring for young) just before the floods took place. However, the case for adults being directly harmed by flooding in this area is again more tenuous—while at least one platypus carcass has been recovered along the Shoalhaven immediately after a flood occurred, many other marked adults have been recaptured after floods none the worse for wear.

Major flooding affected several river catchments in eastern Victoria in the winter and spring of 2007, just a few months after much of the area was incinerated by bushfires. To investigate the impact of this sequence of events on platypus populations, the Conservancy has commenced a research project in partnership with the Department of Sustainability and Environment and Parks Victoria.

To determine if platypus continue to inhabit streams that were first burnt and then flooded, APC staff will undertake replicated live-trapping surveys along a representative range of water bodies in the region. This fieldwork is being carried out in late summer and autumn, when juveniles are easiest to detect if successful breeding did occur.

To ascertain if platypus still survive along rivers that are too deep or fast-flowing for nets to be set safely, visual surveys will be carried out at sites where there are credible pre-flood reports of platypus being seen (indicating that animals lived in the vicinity).

Last but not least, anecdotal information relating to possible changes in the number of platypus seen in flood- and fire-affected habitats will be obtained from individuals who are particularly well-placed to notice such changes, including property owners with stream and river frontage,

members of canoeing and angling clubs, and field staff working for DSE, Parks Victoria and regional water authorities.

Persons having information about how platypus numbers may have been affected by fire and flood in Gippsland (or elsewhere) are urged to get in touch with the APC, so their knowledge can be used to help assess the impact of large-scale natural disasters on this most remarkable mammal.

PRIME PLACES FOR PLATYPUS

The Conservancy and Melbourne Water have been undertaking platypus research since 1994, resulting in a dauntingly large number of reports on the animals' distribution. To make this vast mass of data easier for its staff and contractors to access and use, Melbourne Water recently asked the APC to prepare a comprehensive summary of where platypus are found and where they breed in the urban area. Based on the information in this review, we thought it might be of interest to suggest a list of what (at least in our opinion) are the top five water bodies supporting platypus in the greater Melbourne region:

Yarra River. Platypus have been seen since 2000 on a regular or occasional basis by one or more persons living at View Bank, Lower Plenty, Eltham, Templestowe, Warrandyte, Kangaroo Ground, Yarra Glen, Yarra Junction, Warburton and East Warburton. Accordingly, we confidently predict that platypus occupy all parts of this river upstream of about Heidelberg, though numbers presumably vary locally depending on factors such as habitat integrity and channel width and depth. More generally, the importance of the Yarra River to the long-term survival of platypus around Melbourne cannot be overstated: this river comprises a very sizable chunk of platypus habitat in its own right, is an important corridor allowing dispersing juveniles to travel from crowded locations to less populated sites, and provides a life-saving refuge in dry summers for platypus occupying small tributary streams.

Tarago River. The Tarago joins the larger Bunyip River (which in turn flows into Western Port) in Melbourne's southeastern fringes. Many platypus have been seen in recent years along both the Tarago River and its main tributary, Labertouche Creek. As well, the Conservancy has received several accounts of platypus occupying farm dams located 100 metres or more from these two water bodies, suggesting that the local platypus population is both large (increasing the likelihood that an animal finds a farm dam in the first place) and reasonably crowded (providing motivation for the animal to stay in the dam rather than return to the natural channel). The results of live-trapping studies conducted from 2000 to 2007 confirmed that the Tarago system is associated with a highly productive platypus population, with many breeding age females and juveniles recorded. Their abundance presumably reflects in part the reliable environmental flows released in recent years from Tarago Reservoir.

Woori Yallock Creek system. Woori Yallock Creek flows north to join the Yarra approximately midway along the river's length. From the viewpoint of a platypus, this creek system has at least two desirable attributes: riparian corridors often support substantial numbers of indigenous trees, and the headwaters are located at the edge of the relatively damp Dandenong Ranges. This location means that the Woori Yallock system as a whole generally flows quite reliably. Platypus have reportedly been seen in Woori Yallock Creek at numerous localities since 2000, and also in many of the catchment's smaller streams, including Wandin Yallock Creek, Sassafras Creek, Emerald Creek, Menzies Creek, Cockatoo Creek, Shepherd Creek, Tomahawk Creek, Clark Creek and Sheep Station Creek.

Werribee River. Live-trapping surveys conducted in 1998 and 2000 in and downstream of Werribee township confirmed that platypus were widespread and occurred at a reasonably high density (estimated to be around three adults or subadults per kilometre of channel). Elsewhere along this river, many platypus sightings have been reported since 2000 from Werribee township

upstream to Cobbledicks Ford and near Bacchus Marsh. The animals have also been recorded to occur downstream of Melton Reservoir and in Werribee Gorge.

Jacksons Creek. Jacksons Creek arises near Gisborne and joins Deep Creek west of Tullamarine Airport, forming the Maribyrnong River. Based on sightings reports and live-trapping surveys conducted in the late 1990s, particularly large numbers of platypus occur in and around Sunbury township, with many juveniles and breeding age females encountered in this area. The animals presumably benefit from the numerous rocky riffles and sizable pools in this basalt-dominated catchment, as well as reasonably intact riparian vegetation which helps to protect the creek from impacts of development.

Did You Know That....

Many platypus in parts of Tasmania are infected by a fungus (*Mucor amphibiorum*) which causes large skin ulcers to develop and can result in death. This fungus is also known to occur in frogs on the Australian mainland (where *Mucor* infections in platypus have not been recorded) and may have been introduced to Tasmania by green tree frogs transported accidentally in shipments of bananas.

NEW PLATYPUS BOOK

Platypus (written by Tom Grant, available from CSIRO Publishing, 159 pages)

Tom Grant has been a key figure in platypus-related research since 1978, when he produced two important papers on platypus temperature regulation, based on his Ph.D. thesis.

Many readers will have enjoyed his book *The Platypus: A Unique Mammal*, published in 1989 as part of the University of New South Wales Press Natural History series, with a revised edition appearing in 1995. Persons familiar with these books will recognise some of the same illustrations and drawings in *Platypus*. However, the rest of the book has been thoroughly revamped, with an enormous amount of up-to-date information provided in chapters organised around traditional subject areas: breeding biology, spurs and venom, sensory organs, diving and foraging, ecology, evolution and conservation. The text is complemented nicely by a final chapter devoted to FAQ's (Frequently Asked Questions) and a comprehensive bibliography.

As a conservation organisation, we're especially pleased that an entire chapter is devoted to the effects of various human activities on platypus populations.

It starts off by summarising what is known about how Australia's original inhabitants regarded the platypus—some aboriginal groups seem to have considered them to be very good to eat, whereas others were less enthusiastic about the platypus's culinary merit—and continues with the impact of early European hunters. Many platypus were slaughtered to fashion hats and slippers, with 40 to 60 pelts required to make a single lap rug. Fortunately, the thickness of the platypus's skin (and resulting stiffness of the tanned hide) meant that platypus fur was not in high demand for most types of clothing or export.

The platypus was declared a legally protected species in Victoria in 1892, with New South Wales, Queensland and Tasmania following suit by 1907. Nonetheless, many platypus continue to die today after drowning in crayfish traps or fish nets, becoming impaled on fishing hooks or entangled in litter, or being run over by vehicles after leaving the water to travel around vertical weir walls or elevated culverts.

This publication will be valued by anyone with an interest in the platypus. The author is to be commended for clearly explaining a broad range of scientific findings and also indicating where

the boundaries of current knowledge lie—for despite the wealth of facts in this book, much remains to be discovered about this amazing animal.

FORTHCOMING PLATYPUS TALK

Friday 6 June 2008, starting 7.30 pm at Gwen Webb Art Centre, Market Street, Sale. For more details, please contact the Conservancy.

OUR CONTACT DETAILS:

In 2007, the Conservancy relocated its research base to Gippsland (see *Ripples* 35). Please note (if you haven't previously done so) that our new contact details are as follows:

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