Ripples

Newsletter of the ***AUSTRALIAN PLATYPUS CONSERVANCY***

DEATH TRAPS FOR WATER-RATS

Although many people might consider the Australian water-rat (or rakali) to be a less appealing animal than the platypus, water-rats are just as much a part of the Australian landscape as the platypus and are equally worthy of our interest and support.

Water-rats occupy freshwater habitats across Tasmania and the Australian mainland (including short-lived lakes in the dry interior) and also occupy ocean beaches and many offshore islands.

In ecological terms, they are actually Australia's answer to a highly charismatic group of mammals, the otters.

Just like otters, they have small rounded ears, a blunt muzzle furnished with bushy whiskers, partly webbed feet and a thick furry tail that helps serve as a rudder in the water. Although water-rats are smaller than otters, an adult male can weigh up to 1.3 kilograms (as big as a medium-sized platypus).

The water-rat's ancestors are believed to have arrived in Australia around 5-10 million years, after swimming or rafting from New Guinea. They are smart, active and highly adaptable animals that typically dine on fish, frogs, snails, yabbies, crabs and mussels.

They have also been recorded hunting ducks and coots and are possibly the only native mammal to have mastered the knack of how to kill cane toads – by flipping a toad over before biting it, they avoid the poisonous parotid glands located on the back of a toad's neck.

Large numbers of water-rats were trapped for their fur in the 1930s and 1940s. The animals were mainly killed in hinged metal traps baited with fish and set on the banks.

Water-rats are now officially protected throughout Australia as native wildlife.

APC staff recently analysed all of the water-rat mortality records that have been provided to the Conservancy (by field biologists, natural resource managers and concerned members of the public) since the early 1990s.

Some water-rats were reportedly killed by dogs and cats (which carried the carcasses home to their bemused owners). Others were trapped in the mistaken belief that they were introduced rats, or because they were leaving messy piles of mussel shells and yabby claws on the deck of a houseboat. One water-rat apparently died when a large pile of wood in which it was sheltering was burned, and two reports suggested that drought may have contributed to animals starving.

However, by far the leading factors responsible for water-rat deaths were enclosed fishing nets and yabby traps: of 40 reported mortalities, 42% involved animals that had drowned in opera house traps or home-made equivalents. Another 10% involved animals that had died in drum or fyke nets.

You may recall that fishing nets and (especially) yabby traps are also known to be important factors contributing to platypus mortality, with 44% of all reported platypus deaths in the last three decades linked directly to their use (see *Ripples* no. 41).

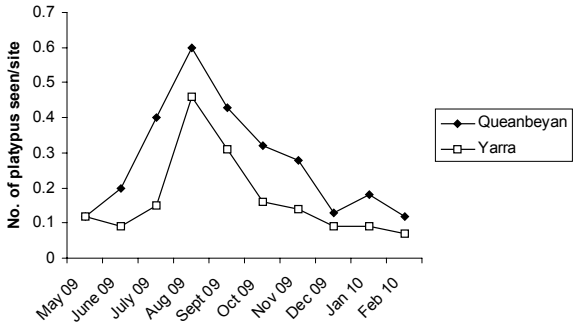
To help reduce this tragic and unnecessary toll, legislation is needed to establish uniform restrictions across Australia on use of opera house traps. We also urge readers to spread the word that the only really safe way to catch yabbies is to use hoop-style lift nets – or an old-fashioned baited string and dip net.

ISSUE 43
Winter 2010

RECENT FINDINGS: PLATYPUS COUNT

We've previously (in *Ripples* no. 40 and 42) described how the frequency of platypus sightings varies in different sections of a single water body (the Yarra River in Melbourne) through the year.

The graph below compares the average monthly frequency of platypus sightings recorded by *Platypus Count* participants from mid-2009 to early 2010 in two different river systems: the Queanbeyan River in Queanbeyan township (near the ACT), and the middle reaches of the Yarra (from Templestowe upstream to Wonga Park).



Except in May 2009 (when the average rate of platypus sightings was the same in both water bodies), the rate of platypus sightings was consistently higher along the Queanbeyan River than the Yarra. However, the pattern of seasonal variation in the two water bodies is otherwise remarkably similar.

In both areas, platypus sightings reached a definite peak in winter and early spring, with animals seen most frequently in August. The relative height of the two peaks is also much the same: along both rivers, platypus were spotted about 5-6 times more often in the best month for viewing animals as compared to the worst month.

In our experience, viewing conditions for platypus are fairly evenly matched along the Queanbeyan and the Yarra's middle reaches – the animals are about equally easy to spot from vantage points along both rivers.

Given that the same methods were used to keep track of sightings in both areas, the simplest explanation for the larger number of sightings at Queanbeyan is that it reflects the presence of more platypus living there.

Two factors have previously been singled out as contributing to the winter peak in platypus sightings recorded (since 2003) in the Yarra:

(1) Adult males become more active as the breeding season commences.
(2) Both sexes have to forage for longer hours and/or over a larger area in order to cope with cold winter conditions.

In addition, it's sometimes been suggested that platypus activity patterns may be influenced by water flow rates, with more platypus being seen when flows increase after heavy rain. Intuitively, this makes sense: platypus may well have to work harder to find enough to eat if strong currents wash away some of their food (in the form of bottom-dwelling aquatic invertebrates) – or cause bugs to hide to avoid being swept away!

Based on what we currently know, it's plausible that the timing of the platypus breeding season in the Queanbeyan River is similar to that in the Yarra – the animals are presumed to mate from about August to early November in both Victoria and the more temperate parts of New South Wales.

By the same token, the timing and effect of frigid weather on platypus may well be fairly comparable at these two locations: although Queanbeyan is located at a higher elevation than Melbourne, it's also farther north and almost certainly experiences more sunny days in winter.

In contrast, while storm run-off may certainly influence platypus activity patterns over short time frames, rainfall data indicates that it is not primarily responsible for the late winter peak in platypus activity. In both Melbourne and Queanbeyan, October and November are typically the wettest months, with August actually qualifying as the third driest month of the year in Queanbeyan.

Within the time period considered in the graph, Melbourne's wettest month was November (104 mm of rain) whereas Queanbeyan's wettest month was February (133 mm of rain at Canberra airport). By comparison, rainfall totals in August 2009 were just 41 mm (Melbourne) and 36 mm (Queanbeyan).

NEW MOVES FOR PLATYPUS

The Morwell River rises in Gippsland's Strzelecki Ranges, flowing north to join the Latrobe River near Moe. The route taken by its lower course has been dramatically altered on several occasions in the past few decades to accommodate expansion of open-cut coal mines providing fuel to the Latrobe Valley's power stations.

In 2006, International Power (which operates the Hazelwood coal mine and power station) asked the Conservancy to assess how the latest plan to re-direct the Morwell River was likely to affect the platypus living there.

The Conservancy is normally wary of developments which substantially modify or alienate existing platypus habitat. However, it appeared that this project would actually deliver significant long-term benefits to the Morwell River platypus population.

Firstly, 3 kilometres of badly degraded (willow-infested) river habitat were to be replaced with 11 kilometres of new channel incorporating pools and riffles and supporting indigenous vegetation on the banks. In addition, a concrete pipe conveying river water for a distance of 3 kilometres underground was to be abandoned. This was very good news: the tunnel was almost certainly discouraging platypus and potentially other aquatic species from travelling along its length, thereby isolating populations found in the Morwell's upper reaches.

The principal remaining concern was how best to go about moving any platypus still occupying the redundant section of river to the new diversion when it was opened. Translocating any species can be a highly fraught exercise. Fortunately, in this case the distance involved was very short and translocated animals were therefore predicted to experience minimal stress. As well, APC staff were able to proceed with some confidence based on knowledge gained by translocating platypus to repopulate Cardinia Creek (e.g. see *Ripples* no. 30).

The APC estimated that around 5-6 adult platypus were likely to reside in the decommissioned section of the channel.

It was also possible that one or more juveniles might be present, so the timing of the translocation effort had to be scheduled with their specific needs in mind.

Most juvenile platypus in Victoria are expected to be weaned by mid-March. The last half of March was accordingly identified as the earliest period when animals could be moved without having to worry about separating mothers from their offspring. Unfortunately, other practical constraints meant that all natural flow along the Morwell River was due to be diverted into the newly created channel by early February. To avoid the possibility that a run of hot, dry days in February and March could cause the abandoned section of channel to dry up prematurely, a small earthen dam was built at its downstream end just before flow was directed elsewhere. Happily, this dam functioned perfectly to retain adequate water for platypus until an APC team could set nets at the end of March.

Rescue operations went smoothly, with five platypus (three males and two females) moved without incident to the new section of the Morwell River. No juveniles were encountered and the females' physical condition supported the conclusion that they had not reproduced this year. The APC team was also pleased to move a number of eels, snake-necked turtles and freshwater crayfish that were encountered as by-catch – helping to bolster natural migration of these species into the newly created area of habitat.

Did You Know That...

The platypus has a special network of intertwined veins and arteries in the pelvic region (known as a rete mirabile or "miraculous network"). This network works as a countercurrent heat exchange system: blood returning to the heart from the legs and tail absorbs warmth from blood travelling out to the limbs, helping a platypus to remain warm even while swimming in cold water for many hours.

FRIENDS OF THE PLATYPUS

You can support the work of the APC by joining *Friends of the Platypus.*

Benefits include:

A subscription to *Ripples.*

Special members' rates for purchase of cards and booklets produced by the APC.

Join now and your initial membership will be valid to 31 December **2011.**

Simply fill in the details below and send to the Australian Platypus Conservancy.

Name_____
Address_____
_____Tel No._____
Email_____

I would like receive Ripples by email: **YES/NO**

Individual Membership (**$30**) _____
Family/School/Non-profit Group(**$45**)_____
Full-time Student (**$20**) _____
Business/government dept (**$100**) _____
Overseas (**add $10 for postage, if NOT receiving Ripples by email)** _____
Research Donation* (optional) _____
TOTAL $_____

***Donations of $2 or more are fully tax deductible.**

Payment by:

☐ cheque/money order (payable to *Australian Platypus Conservancy*)

☐ Visa/Mastercard number:

Cardholder:_____

Expiry:_____

Signed:_____

Date:_____

SPECIAL THANKS TO OUR SUPPORTERS!

The Australian Platypus Conservancy is a non-profit research and conservation organisation.

The success of the APC's programs relies on the support of businesses, management agencies and individuals sharing our interest in one of the world's most amazing animals.

We gratefully acknowledge special recent help by the following supporters:

- ACT Waterwatch
- City of Banyule
- City of Manningham
- Commonwealth Dept of Environment, Water, Heritage and Arts
- EPA Victoria IES Program
- International Power Hazelwood
- Microchips Australia
- Norske Skog
- Parks Victoria
- R.E. Ross Trust
- Platypus Outdoors Group
- Sara Halvedene Foundation
- Shire of Yarra Ranges
- Upper Murray Landcare Network
- Victorian Dept of Sustainability and Environment
- West Doncaster Veterinary Centre

Ripples **is published by Australian Platypus Conservancy.**
ABN 64 255 612 676
Incorporation No. (Vic) A0029254D
(Print Post Publication Number PP 335708/0022)

Printed by
E-Gee Printers
45 Macleod Street
Bairnsdale VIC 3875

Australian Platypus Conservancy
P.O. Box 22
Wiseleigh VIC 3885

Tel: (03) 5157 5568
E-mail: platypus.apc@westnet.com.au
www.platypus.asn.au