

# Ripples

Newsletter of the **AUSTRALIAN PLATYPUS CONSERVANCY**

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## **WATCH OUT FOR WATER-RATS**

Shaped for life in the water, the Australian water-rat (a.k.a. *Hydromys chrysogaster* or rakali) resembles a small otter more than a standard barn rat. Like otters, water-rats are covered with a dense coat of water-repellant (and hence lustrous) dark fur, rely on broad and partially webbed hind feet to propel themselves through the water, and have a stream-lined body and blunt muzzle.

The water-rat is nearly as large as a platypus, measuring up to 40 cm in body length with a slightly shorter tail. The two species will make use of each other's burrows and enjoy many of the same foods, including large aquatic insects, yabbies and freshwater shrimps. It is also possible that water-rats (which, unlike the platypus, are equipped with a sharp set of teeth) may sometimes prey on young platypus, particularly in the juveniles' first few months of development.

Water-rats and platypus look enough alike that the two animals may be misidentified when seen swimming in the water—at least until the head or tail are clearly observed. In place of a bill, the water-rat's muzzle ends in a luxuriant growth of whiskers. While thick by rodent standards, a water-rat's tail is much narrower than that of a platypus—and ends in a distinctive white tip.

In general terms, the water-rat's distribution is known to overlap that of the platypus in both mainland Australia and Tasmania, and the two species demonstrably coexist in many catchments. At the same time, surprisingly little is known about the true status of water-rats in nearly all parts of their range.

Like the platypus, water-rats are quite difficult to census using conventional wildlife live-trapping techniques. Although water-rats can in theory be captured using standard wire mesh cage traps (set at the water's edge and baited with fresh or tinned fish), capture rates tend to be discouragingly low. This probably reflects the fact that water-rats are reasonably intelligent (and hence naturally cautious) animals that spend most of their time foraging in the water rather than on the banks.

Alternatively, water-rats can be detained in nets placed in the water. However, these must be set with due regard for the fact that water-rats are air-breathing animals. As well, the water-rat's formidable dentition is extremely efficient at chewing through mesh netting!

Anecdotal accounts from farmers and anglers suggest that water-rat populations have declined (or in some cases disappeared) from many streams and rivers in recent decades.

In response to this situation, the Conservancy plans to expand its research activities to learn more about the current status and distribution of water-rats. The primary aim will then be to identify problems that are having an impact on this attractive native mammal. At the same time, the work will help to clarify the ecological relationship between platypus and *Hydromys*.

To achieve these ends, the APC is launching a community-based monitoring program for the Australian water-rat (using the highly effective *Platypus Care* project as a model). This will be supported by a publicity campaign to raise public awareness of this 'dinky-di' rodent. In addition, the Conservancy plans to increase water-rat live-trapping studies along selected waterways, to complement platypus survey efforts.

## **PLATYPUS MOVE WITH THE TIMES**

Platypus are highly mobile animals—one adult male radio-tracked along the Yarra River in 1996 was found to travel over 10 kilometres in a single night—and rivers and streams form natural highways. Accordingly, it would not be too surprising if platypus regularly move substantial distances along a waterway when this is advantageous to the animals.

The results of live-trapping surveys conducted by the Conservancy along the Mackenzie River in western Victoria suggest that just such a pattern may prevail in that area, possibly in response to the severe drought which has gripped the region for the past eight years.

The Mackenzie River arises in the mountainous terrain of Grampians National Park and flows in a generally northward direction towards its original natural confluence with the larger Wimmera River, near the town of Horsham.

Within the park boundaries, the river's water is impounded in Wartook Reservoir, which was built in 1887 as part of the enormous Wimmera-Mallee Domestic and Stock Water Supply System. The presence of the reservoir ensures that flow is maintained reliably through summer in the upper reaches of the Mackenzie (for a distance of 10 km or so), but not necessarily farther downstream (see also *Ripples* No. 21).

Live-trapping surveys carried out by the APC in 1997 (in co-operation with Earthwatch and the Project Platypus Landcare coalition) showed that the Mackenzie system still supports platypus, though not in high numbers: just three animals were recorded in the one night of trapping effort (sampling 25 km of river channel).

Since 2000, four additional surveys have been commissioned by the Wimmera CMA (Catchment Management Authority) to provide more reliable baseline information on the status of the Mackenzie River platypus population.

One important finding to emerge from this work is that the Mackenzie River is estimated to support in the order of 20-30 resident platypus, making it the second largest population identified in the Wimmera River system as a whole. (The only larger population—found in the Wimmera River proper upstream of Crowlands township—has been calculated to include around 80 animals based mainly on surveys undertaken in 1997 and 1998.)

Both the percentage of trapping sites where platypus were captured and the average number of platypus captured per site remained unchanged when live-trapping results obtained along the Mackenzie River in 2001/2002 were compared with those obtained three year later, in 2004/2005.

Accordingly, it is reasonable to conclude that the number of platypus occupying the waterway did not decline significantly in the intervening (and very dry) years, despite the fact that the platypus is a highly water-dependent species.

This population's ability to withstand a long period of drought may partly rely on the fact that platypus are relatively long-lived animals, which can survive ten years or more in the wild. Hence, adults may be able to outlast several consecutive years of poor environmental conditions even if few or no juveniles are weaned successfully over the period.

In addition, it was found that platypus capture rates were much higher in the Mackenzie's upper reaches in autumn than in spring, nearly tripling in the case of sites located in Grampians National Park and doubling in the case of non-park sites located within about a kilometre of the park boundary. At the same time, capture rates fell dramatically from spring to autumn at sites located in the river's much drier lower reaches.

The most obvious explanation is that—at least in years characterised by drought—suitable platypus habitats are much more widely available in spring than in autumn along the Mackenzie. In other words, the population is dispersed along the length of the river in spring but becomes concentrated at sites retaining adequate water as the summer progresses.

From the viewpoint of platypus conservation, the seasonal concentration of most (or possibly all) of the Mackenzie's platypus in the upper catchment will increase the adverse impact of any threats to the animals in this area—for example, if folding “opera house” nets (which can very effectively drown platypus) are set illegally by poachers or park visitors to catch crayfish.

Conversely, any actions that can be taken to increase the size or productivity of the refuge habitats currently occupied by platypus at the driest time of the year—or create additional drought-proof refuges farther downstream—are expected to be particularly worthwhile in terms of contributing to local platypus survival.

### ***Did You Know That....***

***In 1799, the platypus was first described by a British scientist, Dr George Shaw. His initial reaction to this original specimen was that it was an elaborate hoax. He even took a pair of scissors to the pelt, expecting to find stitches attaching the bill to the skin.***

### **QUEENSLAND PLATYPUS CARE**

In late 2002, the Australian Platypus Conservancy launched *Platypus Care*, a program to map where platypus occur based on community sightings of the animals.

The initial focus of *Platypus Care* has been on waterways in Victoria, reflecting the fact that the project was primarily funded by the State Government of Victoria, Melbourne Water and most of the state's Catchment Management Authorities. However, many sightings reports have been collected from other parts of Australia and the intention has always been to see *Platypus Care* established in other states.

In keeping with this aim, the Wildlife Preservation Society of Queensland and the APC have been working collaboratively to develop a Queensland *Platypus Care* program.

WPSQ has now created a platypus sightings database for the state, drawn from a variety of pre-existing sources, and is starting to collect new sightings reports. Several pilot community monitoring sessions have also been conducted along Moggill and Enoggera Creeks in Brisbane. A multimedia DVD kit is being produced, drawing heavily on text from the APC website, in order to highlight threats to the platypus, suggest platypus conservation actions and provide hints on platypus monitoring.

Further information on *Platypus Care* in Queensland can be obtained from the WPSQ website ([www.wildlife.org.au](http://www.wildlife.org.au)) or by contacting the Society's Wildlife Projects Officer.

Platypus sightings can also be reported on-line via the APC website ([www.platypus.asn.au](http://www.platypus.asn.au)). All Queensland reports are shared with WPSQ.

### **PLATYPUS BOOK FOR YOUNG READERS**

Children aged 8 to 11 can learn about platypus biology, the importance of protecting stream habitats, and APC research in the 32-page book *There Are Platypuses in Our Creek*. You can buy an autographed copy directly from the authors for \$10 (including p&p). Make cheques payable to Alan Lane and Virginia King, P.O. Box 388, Blackheath NSW 2785 and include the name of the young reader. All royalties from *There Are Platypuses in Our Creek* help to support the work of the Conservancy.

### **WATER-RAT CARD**

Reflecting the APC's increased commitment to studying the Australian water-rat (see page 1), the Conservancy has just produced a new greetings card featuring this beautiful native rodent. Illustrations are by leading Canberra-based wildlife artist Peter Marsack. Printing has been generously undertaken by Stradbroke Printing of Somerton, Victoria. The water-rat cards can be ordered from the APC at \$12.00 per pack of 10, including envelopes (plus \$3.00 for overseas orders).