

Ripples

Newsletter of the **AUSTRALIAN PLATYPUS CONSERVANCY**

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IS THE PLATYPUS THREATENED?

As part of a recent review by the IUCN of the platypus's conservation status, a summary of relevant information was prepared by New South Wales-based platypus expert Tom Grant, with input from the Conservancy's Melody Serena, Frank Garrick (University of Queensland) and Sarah Munks (University of Tasmania).

The group concluded that the platypus has been and continues to be affected adversely by a wide range of factors. Throughout much of the species' distribution in Victoria, New South Wales, the ACT and Queensland, stream and river flows have been drastically reduced due to ongoing drought, damming of gullies, and water extraction for agricultural, domestic and industrial use by an expanding human population.

Ironically, in the more northern parts of the species' range, platypus (particularly young juveniles) may also be subject to increased mortality rates due to the severe and widespread flooding caused by major cyclones in recent years.

Degradation of the platypus's habitat—notably that caused by bank erosion and stream sedimentation—appears to have played a major role in reducing population size in many areas. In the case of urban streams, research has shown that platypus abundance also declines in response to poor water quality and contamination of sediment by heavy metals.

Many platypus also continue to drown in nets set mainly by recreational anglers to catch edible fish or crayfish. While laws controlling such activities have been enacted in Victoria and New South Wales, these rules are often very difficult to enforce.

Accordingly, while the platypus remains a reasonably common animal in some parts of its historical range, populations have become fragmented elsewhere, with many streams and rivers supporting at best low numbers of the animals.

For example, mark-recapture studies carried out over the last 10 years reliably indicate that fewer than 200 adults and subadults still occupy the Wimmera-Avon River basin in western Victoria (inhabiting an area of more than two million hectares).

The platypus continues to occur across much of its original known range, and the species is clearly not in immediate danger of extinction at the national level. At the same time, the cumulative impact of threats such as those described above has demonstrably caused the animals to decline in many streams and river catchments, with some populations known to have disappeared.

Apart from the protection given to the species by various pieces of legislation and its being present within some parks and reserves, we know of no government programs that focus specifically on platypus conservation at either the federal or state levels.

Given the platypus's ecological role as a top predator in freshwater systems and its iconic status both in Australia and internationally, we believe that there is an pressing need to assess how the

species is actually faring across its entire range, and to establish what actions need to be undertaken to conserve regionally depleted populations.

Such a pro-active strategy should ideally help to ensure that the platypus never has to be included on lists of "threatened" species.

AN ISOLATED PROBLEM

In theory, drought may affect platypus adversely in a variety of ways—notably, by reducing the size and productivity of their aquatic environment and increasing their vulnerability to predators (such as foxes and dogs) when surface waters recede.

Like many other parts of Australia, the Melbourne metropolitan region has experienced below-average rainfall for the past decade. Although urban stream flows may be bolstered by runoff via stormwater drains, these inputs have been declining in recent dry summers as fewer people are inclined to water their gardens excessively or wash their cars.

So, what has been the effect of the recent series of dry years on urban platypus populations?

As an essential component of Melbourne Water's monitoring responsibilities, Conservancy staff have assessed platypus numbers since 1994 along a number of urbanised streams, including the lower reaches of Diamond Creek, Mullum Mullum Creek and Plenty River, and the middle reaches of Olinda Creek and Monbulk Creek.

To broadly analyse the effects of long-term drought on the platypus populations in these streams, we calculated platypus capture rates (defined as the average number of adults and subadults recorded per trapping site per night) for each stream in the period from 1994 to 1997, and compared these figures with the corresponding capture rates from 2003 to 2006.

Interestingly, the results in the different systems varied considerably: platypus numbers actually increased quite substantially along Diamond Creek and Plenty River (respectively by factors of more than 70% and 90%) while dropping marginally (by less than 10%) along Mullum Mullum Creek. Conversely, platypus capture rates in the same period declined quite steeply along both Monbulk Creek (by 65%) and Olinda Creek (by more than 70%).

The apparent resilience of the Diamond Creek and Plenty River (and to a lesser extent, Mullum Mullum Creek) populations in the face of long-term drought may at least partly reflect the large amount of effort devoted in recent years by Melbourne Water and others to improving stream health and thereby enhancing the quality of the platypus's habitat.

However, much effort has also been expended in the same period to improving environmental quality along Olinda and Monbulk Creeks, through activities such as removing willows and replanting with native vegetation, creating additional pools and backwaters, and stabilising the channel bed and banks.

In fact, the most obvious difference between Diamond and Mullum Mullum Creeks and Plenty River on the one hand and Olinda and Monbulk Creeks on the other is that the three former water bodies all flow directly into the Yarra River—a much larger system fed by many other tributaries.

In contrast, the middle reaches of Olinda Creek are, from a platypus's point of view, cut off from both its lower reaches and the Yarra by a formidable outlet structure and associated underground piping at the bottom end of Lillydale Lake. Monbulk Creek is even more effectively isolated, given that it comprises the largest remaining stretch of suitable platypus habitat in the geographically self-contained Dandenong Creek catchment.

The fact that platypus can travel easily from Diamond and Mullum Mullum Creeks and Plenty River to the Yarra River (and back again) means that animals have the option of moving temporarily into the much larger water body if conditions deteriorate seasonally in their home stream—say, towards the end of a very dry summer. In turn, this might make all the difference between the animals surviving or dying in a drought year. As well, the rate of juvenile dispersal into physically isolated systems is expected to be much lower as compared to the rate of dispersal between connected systems—making it harder for isolated populations to recover following a period of high mortality (particularly if coupled with locally poor reproductive success).

Hence, maintaining (or restoring) the capacity of platypus to move freely across catchments should always be an important consideration in plans or strategies to conserve the species.



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NEW PLATYPUS CONSERVATION LEAFLET

Caring for Platypus—a leaflet outlining some of the ways in which people can help platypus in the wild—has recently been produced by the Australian Platypus Conservancy. Topics include improving platypus habitat, reducing threats posed by litter and inappropriate fishing practices, and issues relating to water usage and environmental flows along rivers and creeks.

The leaflet is being circulated widely to waterway managers, Landcare and community conservation groups, and primary and secondary schools and tertiary institutions.

Other organisations and interested individuals can obtain copies of this publication free of charge by contacting the Conservancy.

Caring for Platypus has been made possible by the generous support of Australian Geographic Society fundraiser AG82, held from April to June 2006.

LIVING WITH PLATYPUS

For those wanting more detailed information about platypus conservation guidelines, the 40-page booklet *Living With Platypus* is still available. Copies can be obtained from the Conservancy at a cost of \$6.50 each (including P&P) or \$5.00 each for orders of 10 or more.

Living With Platypus is supplied free to members of *Friends of the Platypus* upon joining.

Did You Know That....

Platypus were known to be present on the South Australian mainland in the Torrens and Onkaparinga Rivers in the early years of European settlement. However, the last reliable report of a platypus being encountered in these rivers dates from shortly before 1900, when the animals presumably became extinct in the area.

WATER-RAT REPORT UPDATE

Since the *Water-rat Report* monitoring program was launched by the Australian Platypus Conservancy in mid-2006, several hundred reports of sightings have been received. Although it is too early to assess the findings, some generalisations have emerged from the reports already provided.

Firstly, the media coverage associated with the program has resulted in a very positive community response about the species. Many people who contacted the APC have commented that they had no previous knowledge of the existence of the Australian water-rat (a.k.a. rakali) and they were really pleased to discover this attractive native rodent living in their local area. Following on from this, several community conservation groups have now developed plans for conducting visual surveys of *Hydromys* in their local creek or river and are taking steps to publicise its presence.

Secondly, while most reports date from the present, those from the past are often providing valuable insights into factors that have contributed to the apparent decline of some populations. As well, it has been very interesting to receive written documentation of the sometimes barbaric methods used to capture water-rats for their fur early in the last century.

Thirdly, numerous anecdotes received with the sightings reports are highlighting just how resourceful and bold water-rats can be. One respondent from Queensland even requested advice on how to stop them depositing chewed-up cane toads around the edge of her swimming pool! Another report was of a water-rat seen in Melbourne's busy Flinders Street railway station at the peak of the rush hour.

Copies of *Water-rat Report* forms can be obtained from the APC, or details of sightings (date, place, and number of animals seen) can simply be posted or emailed to the Conservancy.