

Ripples

Newsletter of the **AUSTRALIAN PLATYPUS CONSERVANCY**

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TRANSLOCATION TRENDS

A project aiming to re-establish a platypus population along Cardinia Creek—a small, self-contained catchment located southeast of Melbourne—received a boost in April 2005 when three more juveniles were successfully translocated from the neighbouring Tarago River. Working in close partnership with Melbourne Water, APC staff released two young males and a young female at a site located roughly 2 kilometres upstream of the 2004 release site. This spacing was considered to be ideal in terms of encouraging the development of a single population while reducing the potential for aggressive encounters occurring between newly liberated animals and those already established in the area.

Protocols governing the translocation process and post-release monitoring were essentially identical to those employed the previous year, with one exception. Given that the carefully excavated manmade burrows into which animals were released in 2004 were quickly abandoned, juveniles were liberated directly into the stream in 2005, at a site providing plenty of natural cover in the form of partly submerged logs and branches and plants overhanging the water.

The results of radio-tracking and live-trapping studies undertaken in the weeks since the young platypus were released indicate that all three animals quickly settled into a normal pattern of life in their new surroundings. Importantly, the post-release behaviour of this year's trio has been quite similar to that recorded in 2004, suggesting that it may be broadly representative of young translocated platypus.

Some of the main conclusions to date are as follows:

- Translocated juveniles may initially move either upstream or downstream.
- In both 2004 and 2005, animals have established home ranges within a fairly short distance (about 1-2 kilometres) of the release site.
- Post-release foraging patterns and use of burrows have been entirely normal from the outset, suggesting that newly released juveniles require little (or no) time to become accustomed to their new environment.
- Juveniles have consistently gained weight in the weeks following release. However, this finding may at least partly reflect the provision of supplementary food (in the form of worms left near burrows) in the same period.
- No post-release mortalities have been documented to date. The animals translocated in 2004 are all known to have survived for a minimum of 5 weeks, with two definitely surviving for periods of more than six months. Based mainly on radio-tracking data, those released in 2005 are known to have survived for a minimum of 4, 5.5 and 7 weeks, respectively.

Given the favourable outcomes in both 2004 and 2005, we believe that a good case can be made for translocating two or three more animals to Cardinia Creek in 2006, to boost both the size and genetic variability of the population. With a little luck, the first home-grown juveniles may also appear next year.

PLATYPUS GO WITH THE FLOW

What is the effect of catastrophic natural events, such as major bushfires and floods, on platypus populations?

In the case of fire, a growing body of anecdotal evidence suggests that large fires which burn substantial amounts of a catchment can cause platypus numbers to drop dramatically.

For example, platypus appear to have become extinct along Cardinia Creek in the aftermath of the 1983 “Ash Wednesday” bushfire which incinerated nearly the entire valley (see page 1). Similarly, people residing in the upper reaches of the much larger Yarra River system (which also suffered severe damage in the 1983 fire) have reported that platypus sightings ceased after vast quantities of ash and cinders were deposited in the channel, with the animals not reappearing for several years.

In the case of floods, observations by Dr Tom Grant in New South Wales and APC staff in Victoria suggest that adult platypus are unlikely to be permanently displaced from an area even by very high flows—though some individuals may die through misadventure (for example, drowning after becoming tangled in debris) or by contracting aspiration pneumonia.

By the same token, the fact that the mothers of small juveniles routinely block all tunnels leading to the nesting chamber with a series of compacted soil “pugs” presumably confers at least short-term protection from rising water levels.

The effect of flooding on juvenile platypus at a slightly more advanced stage of development—when the animals are old enough to leave the burrow, but still quite small and weak—was put to the test in early February 2005, when Melbourne received over 120 millimetres of rain in less than 24 hours (the highest one-day total in the city since weather records began to be kept in 1855).

The timing of the storm coincided precisely with the period when juvenile platypus are starting to emerge from their natal burrows in the Melbourne area (and typically weigh in the order of just 450-650 grams).

Conservancy staff heard of only a single platypus carcass (and one living but apparently displaced juvenile) being found by members of the public in the aftermath of the high flows.

However, the results of live-trapping surveys carried out over the following weeks suggest that flooding may have been responsible for many juvenile deaths: the average capture rate for first-year platypus along four annually monitored streams in Melbourne’s outer suburbs from 2000 through 2004 (0.31 juveniles per site per night) was ten times greater than that recorded in 2005 (0.03 juveniles per site per night).

In contrast, little difference was observed in the average capture rate for adult and subadult platypus along the same four streams from 2000 through 2004 (0.49 animals per site per night) as compared to their capture rate in 2005 (0.43 animals per site per night).

The varying response of the two age classes presumably reflects the fact that greater size, strength and experience are all predicted to be advantageous to the platypus in surviving flood waters.

Further surveys in the Yarra catchment next year, conducted as part of the ongoing Melbourne Water Platypus Research Program, should help to shed light on any longer-term effects of the February flood on population age structure in the urban area.

Did You Know That....

Platypus could be seen outside Australia from 1947 (when naturalist David Fleay was successful in conveying two juvenile females and a young male captured in Victoria to the Bronx Zoo in New York City) to 1957 (when the male—named Cecil—was found dead in his enclosure, a few weeks after the sole surviving female managed to escape). During their years in America, the animals mainly dined on earthworms, mealworms, crayfish, egg custard and (in the case of Cecil) frogs.

PLATYPUS: THE WORLD VIEW

The Australian media recently featured images of Prime Minister John Howard happily posed next to a giant platypus sculpture at the Australian pavilion at the Aichi World Expo in Japan. The use of the platypus as the nation's "ambassador" at this major international event is a pertinent reminder of the world-wide appeal of this uniquely Australian mammal.

Reflecting this global interest, the Conservancy often receives queries as to whether platypus can be seen anywhere outside Australia.

The last platypus known to be taken overseas from Australia died in 1957 (see ***Did You Know That?***, above). No platypus has since been sent abroad. After consulting widely with platypus experts, the Australian government imposed a formal ban in the mid-1990's on the export of the species for any purpose, including display in foreign zoos or transfer to research institutions.

It seems unlikely that this policy will be reviewed until a self-sustaining captive population has been established. Given that only a handful of platypus have been bred in Australian zoos in the last decade, it may be many years yet before that point is reached. For the foreseeable future, Australia is likely to remain the only country where platypus can be seen.

However, one intriguing possibility is yet to be fully investigated: Does the platypus exist in New Guinea?

The occurrence of monotremes in New Guinea in the form of various echidna species (including the short-beaked echidna *Tachyglossus aculeatus*, which is also found across Australia) is a reminder that Australia and its island neighbour to the north once formed part of the same landmass. Hence, it is certainly plausible that the range of the platypus once extended to what is now New Guinea.

Furthermore, reports of recent sightings of platypus in New Guinea do emerge from time to time. Checking the accuracy of such information is generally quite difficult. When further enquiries have been possible, it has been concluded that the animals concerned were very probably water-rats. In addition, no hard evidence (in the form of fossils, bones or skins) has ever been made available to support the past or present occurrence of platypus.

However, new species of echidnas have been identified by scientists working in previously inaccessible parts of the island in recent times. Such findings suggest that it is not totally impossible that platypus could still be discovered in remote rivers or lakes.

WEBBED WONDER ON THE WEB

The Australian Platypus Conservancy's official website—www.platypus.asn.au—provides information to suit people of all interest levels.

You can learn more about the biology and ecology of the species in the Platypus Fact File. Special topics include: Discovery and Naming, Distribution and Status, Life in the Water, Matters of Life and Death, Out of the Water, Poison, The Search for Food, Status in Country Areas, and Status in Urban Areas.

Practical advice on how best to assist platypus in the wild is provided in Platypus Conservation Guidelines, while Looking for Platypus offers suggestions about how to monitor local platypus populations using visual survey methods. Platypus sightings can also be reported online.

For those seeking additional detailed information on the species, a reading list provides references for relevant books, popular articles and scientific publications. Articles from back issues of the APC newsletter can be found in the *Ripples* archive section.

You can also find basic information about the Australian water-rat *Hydromys chrysogaster*, the largest native mammal to share the platypus's freshwater habitat.

The website provides details about how to join Friends of the Platypus or sponsor a platypus. Items which can be purchased from the APC—including T-shirts, sweatshirts, cards and posters, and the *Living With Platypus* booklet—can also be viewed and ordered.

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:

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- Healesville Toyota
- Melbourne Water
- *Project Platypus* Landcare Group
- R.E. Ross Trust

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