

Ripples is the quarterly newsletter of the Australian Platypus Conservancy. It provides updates on research in progress and other APC news. Members of *Friends of the Platypus* automatically receive each edition of *Ripples*.

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Newsletter of the **AUSTRALIAN PLATYPUS CONSERVANCY**

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PLATYPUS ON THE MOVE

Knowing how far animals regularly travel-in the course of a day, a season, or their entire lives-is a basic prerequisite to understanding their environmental needs.

In a practical sense, information on platypus home range size and movements is required to interpret the meaning of platypus sightings reports, understand how habitat fragmentation can affect the animals' distribution and status in a catchment, predict how much time will be required for platypus to occupy a rehabilitated waterway, and define the minimum amount of habitat needed to support a healthy, happy platypus population.

A platypus spends most of its life hidden from human view-either feeding below the water's surface or resting in a burrow. To map the animals' day-to-day movements, it is possible to fit them with special radio-transmitter tags and monitor their whereabouts using a wildlife tracking receiver. While this provides a very detailed picture of platypus activity patterns, the tiny size of the radio-tag battery means that a given tag can be tracked for no more than 12 weeks-only a small fraction of a platypus's potential life span.

Alternatively, information on the size of the area occupied by platypus over a period of many months or even years can be obtained by marking individuals with uniquely coded micro-chip transponders (the same type used to identify pet dogs and cats) and then later setting survey nets to locate the marked animals along a waterway.

The APC has recently reviewed the results of platypus mark-recapture studies undertaken by its staff over the last eleven years, with some interesting generalisations emerging.

In brief, 150 platypus have been captured on two or more occasions since 1989. While some animals were recorded at only a single trapping site, 16% were encountered at sites located 4 kilometres or more apart. Each male was encountered over a distance of 5.3 km on average, as compared to 0.9 km for each fe- male. Nonetheless, female platypus certainly move substantial distances on occasion, with one adult female found to travel nearly 10 km along a Melbourne stream. The world record for long-distance movement by a platypus was achieved by a young male recorded nearly 48 km from the spot where he had first been marked (about 7 months earlier) along the Wimmera River in western Victoria.

The fact that platypus are so mobile has some important implications for their conservation.

On the positive side, platypus are expected to discover and potentially occupy rehabilitated sections of a stream or river quite quickly, as long as some animals already live within a reasonably short distance (perhaps 10 km or so) of the improved area of habitat.

On the other hand, if hazardous conditions develop along even a small section of waterway, platypus populations may be negatively affected over a very wide area - for example, if a vertical weir wall or other barrier forces the animals to leave the channel and walk around the obstacle, exposing them to an increased risk of being killed by predators.

In other words, platypus conservation is likely to be pursued most effectively when undertaken in accordance with the axiom which asks us all to think globally (or in this case, at least at the scale of a river catchment) while acting locally.

Did You Know That

observations in both captivity and the wild suggest that platypus may sometimes enter a state of torpor, in which their body temperature drops considerably and they remain inactive in a burrow for up to about six days.

Almost nothing is known about the environmental conditions or other factors responsible for triggering this behaviour, apart from the fact that it has only been observed in the colder months of the year (from late May to early September).

RECENT APC PLATYPUS SURVEY RESULTS: HOPKINS AND WIMMERA RIVERS

The Wimmera and Hopkins Rivers both mainly flow through agricultural landscapes devoted to the production of sheep, cattle and a wide variety of grains and other crops in western Victoria.

Platypus live-trapping surveys along the Wimmera River began in 1997, in co-operation with eleven Landcare groups working together in the upper catchment under the collective banner of Rio Tinto Project Platypus. Since that time, survey nets have been set at 141 sites distributed across approximately 150 kilometres of waterways, thereby sampling about one-third of the Wimmera and large sections of most of its reliably flowing tributary streams.

The most recent round of surveys along the Wimmera was undertaken in December 2000 to monitor the status of platypus in two key areas for the species - the Wimmera River between Elmhurst and Crowlands, and parts of Mount Cole Creek.

The good news is that the platypus population occupying the upper reaches of the Wimmera proper appears to be thriving, with a large proportion of the captured animals comprising breeding age females. On the other hand, it appears that platypus may have genuinely declined in the past 12 months along Mount Cole Creek, with no animals recorded in two areas where a total of 15 individuals have been marked since 1997 (and where at least five platypus have previously been captured in any given survey session).

The only factual evidence bearing on possible reasons for such a decline has been obtained

with the help of a local landholder, who took the trouble to carry home the remains of a dead platypus found near the creek in June and promptly report her find to the APC.

A careful post-mortem examination revealed that the animal (a young male) had substantial fat reserves, indicating that he had not died from disease or malnutrition. The only visible injuries were to the top of the skull (which had been crushed at the back) and to the neck (which had been broken). The most obvious explanation was that the animal had died after being grabbed by the head and shaken forcefully by a predator. Based on the pattern of damage to the skull, the culprit was most likely to be a fox (or a similar-sized dog).

Terrestrial predators like the fox are most likely to be a problem to platypus survival along relatively shallow and narrow waterways (like Mount Cole Creek), particularly if water flows decline during dry weather and thereby further reduce opportunities for platypus to escape or hide effectively. In such cases, the best long-term strategy for helping platypus to cope with predators-or improve the likelihood that a depleted platypus population is replenished through natural migration into the area-may well involve encouraging an abundance of shrubs and smaller plants to grow along the channel. The vegetation should both limit easy access by predators and provide platypus (and other potential prey species) with protective cover.

In the case of the Hopkins River, platypus surveys were first undertaken near Mortlake in March 1999, in co-operation with the Central Hopkins Land Protection Association. A total of seven platypus, all adult males, were recorded at sites distributed along a 40 kilometre stretch of the main river.

APC researchers recently resurveyed the same section of the Hopkins, and were pleased to encounter a total of eight platypus, suggesting that the population is currently stable with respect to the overall number of animals residing in the area. As was also true in the first survey, more than half of the animals were rated as being in better than average condition in terms of their fat reserves. As well, three of the eight platypus were females, confirming that at least some sections of the survey area are likely to be providing breeding opportunities for the species.

PROTECTING PLATYPUS LEAFLET

Australian Platypus Conservancy studies of urban waterways have found that a large number of platypus become entangled in litter. On average, more than 10% of the animals examined during APC surveys have had at least one piece of litter caught around them.

In country areas, evidence has emerged of another problem for platypus caused by human activity. Many animals have been recorded with cuts or scars, usually to the head or bill. Such injuries appear to result from encounters with barbed wire or other fencing materials that cut into platypus as the animals swim underwater with their eyes closed.

To raise public awareness of these issues, the Conservancy has produced a leaflet entitled *Protecting Platypus*. Six case studies from the APC's records are used to graphically illustrate some of the horrific injuries suffered by platypus as a consequence of encountering items such as discarded fishing-line, dumped industrial and building waste materials, domestic rubbish and derelict fencing wire.

The new publication is being circulated widely to schools, libraries, community groups, councils and management agencies. Copies can be obtained by contacting the Australian Platypus Conservancy.

The *Protecting Platypus* leaflet has been sponsored by ITW Hi-Cone, which manufactures photodegradable plastic ring carriers. When exposed to sunlight, ultra violet rays cause the plastic in Hi-Cone rings to lose its tensile strength and become brittle so the material is eventually reduced to dust. In turn, this should significantly lower the risk of entanglement by platypus and other aquatic species where ring carriers have been thoughtlessly discarded.

NEW POSTER

The APC has recently produced a new colour poster to highlight platypus conservation, with the help of a Parks Victoria Community Grant. The painting of two platypus diving in a swirl of bubbles is by leading wildlife artist, Pete Walton. Pete is a prominent member of the Wildlife Art Society of Australasia and is currently working on a leopard seal illustration for Australia Post for an Antarctic Territories stamp issue.

The artwork has also been used to produce a new blank greetings card. The poster and card can be ordered from the APC.