

Ripples

Newsletter of the **AUSTRALIAN PLATYPUS CONSERVANCY**

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UPDATE: PLATYPUS, FLOODS AND FIRES

As foreshadowed in *Ripples* 37, the APC conducted a study in mid-2008 to examine the effect of major bushfires and flooding on platypus populations in eastern Victoria. Working in partnership with the Department of Sustainability and Environment and Parks Victoria, live-trapping surveys were carried out in the region between Thomson Dam and Bairnsdale, in the upper catchments of the Thomson, Macalister, Avon and Mitchell River basins.

Platypus were encountered in all four survey areas, with population densities ranging from an estimated 1.2 adults and subadults per kilometre of channel (in the Wentworth and Barkly River sub-catchments) to as few as 0.6 adults and subadults per kilometre (in the Aberfeldy River sub-catchment).

No direct relationship was apparent between platypus numbers and the amount of recent fire damage sustained by trees growing in the vicinity. In turn, this fits with the fact that platypus shelter in burrows, which should normally protect animals from the immediate effects of flames, smoke and radiant heat.

In contrast, flood damage (as gauged by the amount of recent bank erosion and freshly deposited sediment in the channel) was found to be inversely related to platypus population density: the greater the impacts of flooding, the fewer adults and subadults were recorded.

Similarly, the only place where juveniles were not captured (the Aberfeldy sub-catchment) also appeared to have suffered the greatest flood-related damage, suggesting that floods can have a detrimental effect on both adult survival and subsequent recruitment of young animals.

Flooding may cause platypus to die when they drown or are battered by debris carried in flood waters. They may contract aspiration pneumonia after inhaling water, lose condition when populations of their main prey (bottom-dwelling aquatic invertebrates) are swept away, or be swept downstream themselves and have to find their way home via unfamiliar and potentially dangerous territory.

Floods may also degrade the quality of the platypus's environment over the longer term, particularly if pools become badly clogged by sand and finer sediment, or erosion flattens out stream banks—increasing the risk of predation as platypus travel between the water and their burrows.

It would not be surprising if problems arising for platypus from flooding tend to increase in the downstream direction, along with the growing volume of water pouring through the channel. Based on anecdotal information, the effect on platypus populations can be dramatic.

For example, the manager of a caravan park in the middle reaches of the Macalister River reported seeing platypus regularly in the four years prior to the devastating flood of mid-2007, with up to seven individuals observed on any given evening. Platypus sightings ceased abruptly at the time of the flood, with no animals seen thereafter up until at least June 2008 (when he was interviewed).

In theory, as long as some platypus survive in a river catchment, their descendants should eventually repopulate the system—if recolonisation isn't disrupted by further major disturbance.

In practice, it will be interesting to see how long it takes for platypus to again be seen routinely at sites where they vanished in mid-2007.

SETBACK TO REINTRODUCTION PROJECT

The program to reintroduce platypus to Cardinia Creek in Melbourne's outer southeastern suburbs has generally been a great success since it was initiated by the APC and Melbourne Water in 2004.

Ten young animals were translocated to Cardinia Creek from nearby river catchments from 2004 to 2007, with the first home-grown juveniles recorded in April 2006. Three or more offspring have been weaned in each subsequent breeding season, suggesting that the population should be well on its way to becoming self-sustaining.

Sadly, at least two members of the population are now known to have been killed in folding "opera house" yabbie traps set illegally along Cardinia Creek (not far from Beaconsfield township) late last year.

Two different persons reported finding a dead platypus in an underwater trap over a period of about a week to the Department of Sustainability and Environment's customer call centre. A third person reported that he had heard that the traps were being set by teenagers mainly interested in capturing the large spiny crayfish which continue to inhabit Cardinia Creek.

Along with crayfish, opera house traps are designed to capture yabbies, which are eaten by platypus. Accordingly, a platypus may either swim inadvertently into an opera house trap or actually be lured into the trap because it holds one or more edible crustaceans. Having entered the trap, a platypus will quickly drown—in less than three minutes—unless the top of the trap projects above the water surface.

In places where platypus are abundant, the toll taken by even occasional use of opera house traps can be horrific. For example, no fewer than three dead platypus (one very large and two smaller animals) were recovered from a single opera house trap set overnight at a popular picnic spot along the Tarago River (not far to the east of Cardinia Creek) in 2006.

Reflecting the fact that opera house traps and other types of folding frame nets pose a very real threat to a wide range of air-breathing aquatic vertebrates (including native water rats, tortoises and water birds as well as platypus), their use in Victorian public inland waters has been banned since 2001.

Persons holding a valid Victorian recreational fishing license are permitted to catch yabbies and crayfish in rivers and streams either by hand or with the help of simple baited lines (without hooks) or collapsible hoop nets (set flat on the bottom of the channel). It is also legal to use opera house traps in privately owned off-stream dams, as long as the owner gives permission.

The standard penalty for unlawfully setting an opera house net is currently a fine of \$567. Persons who kill a platypus (which is gazetted as notable wildlife in Victoria) can be fined up to \$12,000 and/or spend a year in prison.

In response to the totally pointless deaths of platypus along Cardinia Creek, Fisheries officers are stepping up the frequency of routine patrols in the area. This increased vigilance also reflects concerns that the local population of spiny crayfish—slow-growing creatures which take years if not decades to reach maturity—is being harvested in an unsustainable manner.

However, given practical constraints on the officers' time, it's clear that the community has an important role to play in curbing illegal fishing practices in this and other areas.

Accordingly, anyone finding an opera house trap set along Cardinia Creek (or other public waters in Victoria) is encouraged to ring the Fisheries hotline immediately to report the matter (13 3474 or 13 FISH).

Did You Know That....

The platypus genome has been recently estimated to include a grand total of 18,527 protein-coding genes (about 15% less than the corresponding number in humans), packaged in a set of 52 chromosomes.

PLANNING FOR PLATYPUS

As noted in *Ripples* 29, protecting the platypus and its environment should be a standard feature of good government throughout the species' range. Now, one local council in Victoria has taken the lead in commissioning a comprehensive Platypus Conservation Strategy.

The Shire of Yarra Ranges is located on the eastern outskirts of Melbourne. It encompasses a large area of suburbs and rural fringe, as well as a substantial expanse of relatively pristine forest in the headwaters of the Yarra River catchment. The Shire has responsibility for more waterways supporting platypus than any other municipality in the Melbourne region. Creeks within its boundaries also contain some of the most threatened platypus populations in the urban area. For example, Olinda Creek and Monbulk Creek both support isolated populations comprising fewer than 30 animals.

The Australian Platypus Conservancy and Shire of Yarra Ranges are now working together to identify measures to assist the species locally. This includes establishing a detailed map of where platypus occur and their status throughout the municipality. This information can then be taken into account in the council's planning procedures, ensuring better protection of biodiversity values.

The Platypus Conservation Strategy will also include information needed to help set priorities for habitat restoration work by council and community groups, and highlight opportunities for raising awareness of the community's other roles in conserving the species. In addition, it will review current maintenance practices in council parks and reserves. This may potentially cut operating costs for the Shire—for instance, by reducing the amount of routine mowing required in riparian areas where leaving a buffer of native vegetation is identified as a better option.

MORE MONITORING UNDERWAY

The scope of the APC's visual monitoring programs continues to grow.

Platypus Count—which relies on volunteers to record platypus sightings systematically over time at fixed sampling points—now includes persons living in and near the Australian Capital Territory. Working in partnership with ACT Waterwatch, the Conservancy presented an information session late last year in Queanbeyan, not far from the Queanbeyan and Molonglo Rivers. Volunteers are also being asked to keep track of water rats, which are abundant in many places around the ACT, including Lake Burley Griffin.

Platypus Count will also expand over the next year to include new locations in country areas, thanks to a grant from The Norman Wettenhall Foundation.

At the same time, field trials to develop effective visual monitoring techniques for use by groups (funded by the Sara Halvedene Foundation) have yielded very promising results. As well as TAFE students (see *Ripples* 38), a number of Landcare groups in East Gippsland have now participated in early morning or late evening counts of the platypus and water rats living in their local areas. This has enabled the recommended protocol for such surveys to be fine-tuned, with the APC now in the process of developing a self-contained kit for persons interested in setting up their own monitoring programs in future.

Individuals who would like to become *Platypus Count* volunteers in the ACT, Melbourne or elsewhere are encouraged to contact the APC for more details. Similarly, any Landcare or other environmental group interested in monitoring platypus and/or water rats is invited to register with the APC to receive a *Platypus Group Count* information kit later this year.

The Conservancy is very grateful to the following organisations for their support in developing community-based platypus monitoring programs:

Sara Halvedene Foundation
ACT Waterwatch
The Norman Wettenhall Foundation