Platypus News & Views

Newsletter of the Australian Platypus Conservancy (Issue 65 – August 2016)

WILL THE CARP CONTROL VIRUS BE GOOD FOR PLATYPUS?

The May 2016 Federal Budget included a commitment of $15 million over three years towards implementing the National Carp Control Plan, including the staged release of a carp herpes virus tested by CSIRO. It is hoped that the virus will kill at least 70% of this introduced pest fish while leaving native fish species unaffected. This raises the question: Will a drastic reduction in carp numbers be a good thing for platypus?

The common or European carp (*Cyprinus carpio*) is a stunningly successful invader of Australian freshwater environments that began its march to dominance in the 1960s, after a farmer in southeastern Victoria imported a particularly prolific and adaptable strain to grow in aquaculture ponds. Carp now inhabit every state and territory apart from the Northern Territory and are sometimes aptly described as being the rabbits of our waterways. A breeding female can produce up to 1.5 million eggs at a time, most of which will normally hatch. Carp can survive in cold water (down to 5^{o}C), warm water (up to 32^{o}C), brackish water, turbid and polluted water, and stagnant water holding very little oxygen. They are omnivores that feed on many of the same macroinvertebrate prey items consumed by a platypus (small clams and mussels, worms, aquatic insect larvae, etc.) along with miscellaneous plant material.

In addition to competing with platypus for food, carp are believed to reduce the productivity of freshwater ecosystems by eating and uprooting aquatic vegetation, stirring up bottom sediment (leading to increased water turbidity, which further restricts growth of submerged plants) and undermining the soil under banks. It would therefore seem highly unlikely that the presence of a large carp population will be a favourable development for platypus.

In fact, there is anecdotal evidence to support the view that carp have a detrimental impact on platypus numbers. For example, a number of landowners living along the middle reaches of the Mitchell River in East Gippsland have reported that platypus sightings declined sharply on their properties in the 1980s as carp numbers increased rampantly along the waterway.

Some additional supporting evidence has come to light through work carried out by the APC along Cudgewa Creek, a small tributary of the Murray River located near the town of Corryong in northeastern Victoria. This creek is bisected by a steep natural rock bar measuring about 2 metres in height that (according to persons living along the creek) has prevented carp from colonising the channel upstream of the rock bar. Conversely, carp are widely distributed and abundant downstream of the rock bar. Working alongside members of the Upper Murray Landcare Network, the Conservancy carried out platypus visual surveys both upstream of the rock bar (at six sites) and downstream of the rock bar (at seven sites) in 2009/10. The results indicated that a very healthy platypus population was found upstream of the rock bar, where up to six different individuals were observed concurrently. In stark contrast, platypus were never seen to be active in the carp-infested lower zone. Given that platypus habitat quality seemed to be fairly similar above and below the rock bar, the obvious conclusion was that carp have contributed to reduced platypus usage where the fish have become established.

The Cudgewa Creek study demonstrably does not provide a definitive answer to the question of how carp affect platypus numbers. However, it does at least suggest that releasing a successful bio-control agent for carp may be good news for many platypus populations.

APC LAUNCHES A COMMUNITY-BASED RAKALI SURVEY IN VICTORIA

The Australian Platypus Conservancy has always maintained that wildlife conservation is best achieved by identifying threats, building community awareness of issues and launching recovery actions well before population size falls to dangerously low levels.

Based on this premise, the Conservancy has vigorously promoted platypus conservation in both urban and rural habitats for well over two decades.

The APC has also long championed the needs of another very special native aquatic mammal, the Australian water-rat or rakali (*Hydromys chrysogaster*).

Like the platypus, rakali is a predator positioned at the top of the aquatic food chain, dining on mussels, yabbies and insect larvae as well as fish. The two species are also similar in that both are notoriously difficult to study in the wild.

Along with being quite difficult to capture in traps or to fit with tracking devices such as radio-tags, water-rats are lumbered with being related (albeit fairly distantly) to introduced pests such as sewer rats and wharf rats. Accordingly, the species has traditionally attracted relatively little interest or funding support from government or non-government sources. Reliable information about the distribution and abundance of water-rats is consequently in short supply, limiting our understanding of the species' conservation status (particularly on a regional basis).

Happily, with the help of support from the Norman Wettenhall Foundation, the APC is currently embarking on a community-based project to assess the distribution, status and habitat usage patterns of water-rats in Victoria. A publicity campaign will be launched to encourage people to report rakali sightings, and targeted surveys will be conducted to elicit information about population trends in key regions.

The overall aim is to provide a practical and comprehensive baseline report that will help catchment management authorities, other management agencies and community conservation groups to plan and carry out activities to assist water-rat conservation.

A series of illustrated talks and other community education activities will also be organised across Victoria to foster greater public awareness of the existence and environmental needs of this under-appreciated native mammal. By promoting active support for this species, it should be possible to harness this interest to help address broader management concerns along local waterways.

This Victorian-wide initiative aims to build on the success of the APC's recent survey of water-rat sightings in the Gippsland Lakes (see *PN&V* 58) and to complement the findings of a report on the status of rakali in Western Australia that was produced last year (see *PN&V* 63). It's hoped that this project will also help to establish a model that can potentially be applied in other parts of the species' range, to create a reliable basis for evaluating the water-rat's conservation status across Australia.

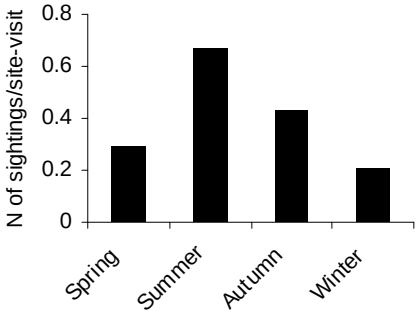
Meanwhile, we encourage anyone who has seen a rakali (either recently or in the past) to report the details to the Conservancy. Any environmental or community groups in Victoria that are potentially interested in hosting a public talk on rakali by Conservancy biologists this year (in October or November 2016) are also invited to get in touch for further information.

PLATYPUS COUNT: YARRA RIVER AT WARBURTON

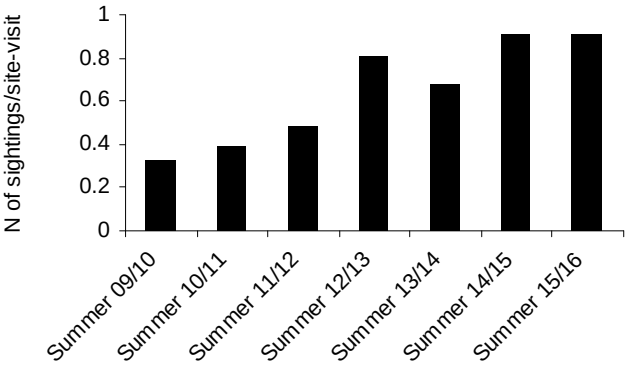
The Yarra River flows through Victoria in a generally westerly direction for a distance of nearly 250 km, from Mount Baw Baw to Port Phillip Bay. The local Wurundjeri people knew the river as Birrarung, or "river of mists and shadows". Its modern name apparently stems from miscommunication between an early English surveyor named John Wedge and a group of local inhabitants. When asked the name of the river running past, they answered "Yarro yarro", meaning "It flows".

The small town of Warburton – where volunteers have been contributing data to the Conservancy's *Platypus Count* monitoring program since 2009 – is located on the Yarra in the river's upper reaches. The river flows very reliably at Warburton, water quality is good, and the banks are generally well-vegetated and support plenty of indigenous trees and shrubs (see photo at right). As reported in *PN&V* 61, the local platypus population appears to be thriving, with one or more animals seen in a high proportion of the monitoring sessions carried out in 2014/15.

The graph at right depicts the mean (or average) seasonal frequency of platypus sightings made at Warburton in the years from 2009 to mid-2016. As you can see, sightings occurred most often in summer, when breeding females are particularly likely to be visible as they work long hours (up to 18 hours a day) to support lactation. Thus, the available evidence suggests that Warburton continues to be a focus for successful platypus reproduction (as was true in the early 2000s, based on the results of live-trapping surveys carried out by the Conservancy).



The graph below shows how the mean frequency of platypus sightings at Warburton has varied annually in the past seven summers. The good news is that the high frequency of animals seen in 2014/15 was equalled in the most recent summer, when a grand total of 0.91 sightings were recorded on average per site-visit. By comparison, the frequency of sightings near the downstream end of the platypus's current range along the Yarra (in View Bank) was 0.015 over the last two summers (or less than 2% of the frequency recorded at Warburton).



VIDEO OF A PLATYPUS INTERACTING WITH A GREBE

To see a fascinating video by Joanne and Tony Leggo that shows an Australasian grebe (*Tachybaptus novaehollandiae*) interacting with a platypus at Peacock Creek in New South Wales, you can go to www.youtube.com/watch?v=S4cswIyaRHw.

So what's going on with the platypus and grebe?

The video documents the grebe approaching the platypus very closely on four occasions, with the two animals then diving in close synchrony. However, the dive is initiated on each occasion by the platypus, with the grebe following the platypus's lead within a second or less. On one occasion, the grebe gives the platypus a little peck on its back, as if to say "Hurry up then, get on with it".

Australasian grebes feed on many of the same prey items that are eaten by a platypus, including aquatic insects, small crayfish and snails. They sometimes forage on the water surface (as shown at one point in the Leggo's video) but are also well adapted to finding food by diving. They have also been observed associating at times with other waterbirds apparently for the express purpose of capturing prey that the other birds flush out.

It therefore seems likely that the grebe at Peacock Creek has learned that a platypus excels at locating live edible items on the channel bottom, at least some of which will elude capture by the platypus and thus become potential prey for the grebe. It would be interesting to know what the platypus thinks about this activity – in the video, the platypus doesn't look too fussed, but perhaps things would be different if a platypus was better equipped (for example, with sharp teeth) to object to the bird's behaviour.

MISSED AN EDITION OF *PLATYPUS NEWS & VIEWS*?

The first issue of the Conservancy's newsletter was published in March 1995. Back copies of *Platypus News & Views* (formerly *Ripples*) from the fourteenth issue on can be found on the APC website (www.platypus.asn.au).

HELP US TO HELP THE PLATYPUS

The Australian Platypus Conservancy is a non-profit, non-government organisation.

Many of the Conservancy's projects are funded by grants from management agencies, philanthropic trusts or corporate sponsors. Donations from individuals and environmental groups also contribute enormously to the APC's work, by supporting platypus population monitoring, public education programs and special studies that can't otherwise be readily funded.

If you would like to help out, remember that donations and bequests to the Australian Platypus Conservancy are tax-deductible.

Australian Platypus Conservancy

PO Box 22, Wiseleigh VIC 3885
(03) 5157 5568 platypus.apc@westnet.com.au
www.platypus.asn.au
Facebook: Australian Platypus Conservancy (Official)

Platypus News & Views (formerly *Ripples*) is published by the Australian Platypus Conservancy.
ABN 64 255 612 676 Print Post Publication Number 335708/0022