

Platypus News & Views



Newsletter of the Australian Platypus Conservancy (Issue 81 – August 2020)

VICTORIAN LEGISLATION STRENGTHENS PLATYPUS PROTECTION

The Victorian Flora and Fauna Guarantee (or FFG) Act was originally enacted in 1988 to provide a framework for protecting the state's biodiversity. Following an extensive review last year, the FFG Act has now been updated and strengthened, with the new provisions coming into effect on 1 June 2020.

The scope of the Act has been broadened considerably: government authorities (including state agencies, local councils and state-owned enterprises such as VicForests and Melbourne Water) are now obliged not only to protect species and communities that are officially deemed to be threatened, but also - very importantly - to prevent *all* wild flora and fauna (apart from excluded species such as declared pests) and natural communities from becoming threatened in the first place. They are also required to protect genetic diversity and ecological processes, to identify and mitigate the impact of processes that undermine biodiversity, to ensure that natural resources are used in an ecologically sustainable manner, and to conserve areas of critical habitat.

The wording used to define the legal obligation of authorities (that they must "give proper consideration to" the objectives of the FFG ACT) is drawn from Victoria's Charter of Human Rights and Responsibilities. This wording has previously been ruled by the Victorian Supreme Court to mean that public authorities must address their human rights obligations seriously in their behaviour and practices – empty statements aren't enough. By implication, the same will apply to their obligation to protect biodiversity.

To our mind, the changes to the Victorian FFG Act are potentially ground-breaking in that they require agencies and local government councils to work proactively to integrate positive conservation attitudes and outcomes into their basic operations.

These changes should also help to avoid the pitfalls inherent to any system of environmental protection that's predicated on dividing species and communities into those that are officially deemed to be threatened and those that don't appear on a state or federal threatened list (with funding for conservation and research activities typically much easier to secure for the first than the second group). This binary approach to conservation is simply not appropriate for species (like the platypus) that comprise numerous populations spread over a large geographic area, some of which are quite robust and secure while others are small and vulnerable.

Relying on a fundamentally bureaucratic and binary approach to assess and assign conservation status is also looking increasingly out of date in an era when remote sensing, real-time global environmental monitoring, sophisticated predictive modelling software and citizen science are all important emerging themes.

Accordingly, we're hopeful that the amended FFG legislation will pave the way for a more nuanced (and also more balanced and rational) approach to platypus conservation than has sometimes been the case in Victoria in recent years.

Of course, the real test for the Act's effectiveness will be measured by the future response of government authorities when wildlife values potentially conflict with human activities.

PLATYPUS BREEDING BEHAVIOUR: HOW TO RAISE A BABY

A female platypus produces at most one litter a year: up to three eggs are incubated for 10-11 days in an underground burrow, with juveniles then developing in the nesting burrow for an additional 3-4 months before emerging to take their first swim in the wild.

Using endoscopic and infrared cameras, renowned wildlife cinematographer David Parer succeeded in capturing the first underground images of a mother platypus and her two offspring in a Tasmanian nesting burrow in the summer of 2002/03.

More recently, Dr Jessica Thomas has investigated platypus maternal care in captivity at Healesville Sanctuary over the course of 11 breeding seasons, from 2007 to 2018. She used infrared cameras to record how much time a mother spent foraging in the water and the timing of specific events such as juvenile emergence, as well as to film the behaviour and interactions of a mother and her twin sons over a 12-week period inside a nesting burrow.

In brief, Jessica's findings (now published online by the journal *Australian Mammalogy*) reveal that a mother platypus remains in the nesting burrow for 98% of the time during incubation and the first few days after eggs hatch - typically emerging every second day for around 80 minutes to stretch her legs and feed in the water. Normal foraging sessions (defined as lasting more than 8 hours) didn't resume until litters were 23-36 days old. At this point juveniles still lack fur and are incapable of purposeful movement, and remain within a woven spherical nest made of vegetation when their mother is absent.

A baby platypus's eyes open at the age of about 13 weeks. By this time, it can walk in a co-ordinated manner and is becoming well insulated by fur. Unsurprisingly, an infant platypus spends a lot of time sleeping, either curled up on its side or stretched out on its back. Other behaviours include rolling over, walking, grooming, yawning, chewing on a piece of grass, covering itself in nesting material, and climbing over any siblings that may be present. However, complex play behaviour doesn't occur. This presumably reflects the limited space inside the burrow, and also the fact that the main duty of a baby platypus is to conserve its energy and GROW.



These twins were accidentally dug up from a burrow located along the Buchan River in Victoria when they were roughly 11 weeks old.

When suckling her offspring, the mother of twin sons either reclined on her side or flat on her stomach with both nestlings lying on their backs beneath her, their bodies visibly pulsating as they greedily imbibed milk. After they finished feeding, she sometimes rubbed her bill over theirs, perhaps to clean off any sticky residue. Before leaving the nest to forage, she circled around her sleeping offspring and arranged nesting material around and over them to help keep them warm in her absence.

In captivity, litters were confined to the nesting burrow for 16 weeks or more after hatching. Juveniles generally decided for themselves when they wanted to emerge for the first time, often when their mother was out foraging. However, every rule has its exception: on one occasion, a young female who apparently had overstayed her welcome at home was literally pushed out of the nesting burrow by her mother, who collapsed the burrow structure as they both left so there was no possibility of her daughter ever returning!

RAKALI LOOK-ALIKES

The platypus is the only animal that's likely to be mistaken for a rakali (or Australian water-rat) in the water. Both species have more or less dark-coloured fur when viewed from above, are fairly similar in size, share many of the same aquatic habitats, and are normally solitary when they forage - often by conducting neat duck dives. However, the two have strikingly different tails: slender and white-tipped in the water-rat, broad and uniformly brown in the platypus.



Photo credit: James Pettit

As compared to a platypus, a water-rat is much more likely to spend time on land: most often while moving along a shoreline, but sometimes far from the nearest surface water. This raises the question: Are there any other animals that can potentially be confused with a rakali when it's out of the water? In fact, at least three candidates exist in Australia – each about the size of a water-rat and adorned with a long, white-tipped tail.

The common ringtail possum (*Pseudocheirus peregrinus*) shares much of the water-rat's geographic range, occupying woodlands, forests and urban habitats along the southern and eastern coasts of Australia from approximately Adelaide to the tip of Cape York, as well as southwestern Western Australia and Tasmania. It's also close in size to a water-rat (typically weighing 700 to 1100 grams, as compared to rakali's 600 to 1200 grams). However, the possum's conspicuously white-tipped tail is prehensile (used as a fifth hand to help it travel safely in trees) and so is often held in a loop or is kinked at the tip (as shown at right). Unlike water-rats, ringtail possums are marsupials, are rarely active on the ground and almost exclusively feed at night. They also have distinctly larger ears than a water-rat. However, although water-rats aren't often seen in trees, they can climb at times (and have been known to include bats in their diet). In practice, the two species are most likely to be misidentified after they've died – we know of two cases when a rakali that was killed by eating poisoned rodent bait was first thought to be a possum, and at least one instance in which a dead possum found near a lake was initially thought to be a water-rat.



Photo credit: Queensland Museum

Two large rodents that share the water-rat's range in the Australian tropics have white-tipped tails: the giant white-tailed rat (*Uromys caudimaculatus*, 300 to 700 grams, shown below at left) and the black-footed tree-rat (*Mesembriomys gouldii*, 500 to 900 grams, shown below at right). Both animals feed on the ground as well as in trees, though not in the water. However, unlike rakali, the tail of the giant white-tailed rat is entirely unfurred; the tail of the black-footed tree-rat is well-furred but somewhat shaggy at the tip.



Photo credits: Glenn Stokes (above)
Joel Sartore (right)



A TRULY LAID BACK “AUSSIE OTTER”

The Australian water-rat (or rakali) typically carries its food to a convenient log or rock before sitting down to dine. The remains of water-rat takeaway - piles of mussel or clam shells, crayfish claws and fish bones – often accumulate at favourite feeding platforms, providing reliable evidence that rakali occur in the vicinity. However, water-rats sometimes remain in the water while consuming their prey, occasionally using their chest as a makeshift table – behaviour very reminiscent of sea otters. Many thanks to Sputnik for sharing this very engaging image of Australia’s version of an otter enjoying a fish snack while floating in the midst of water fern (or *Azolla*).



Incidentally, this photo was taken at Taillem Bend in South Australia - one of the few remaining jurisdictions in Australia that still allows enclosed yabby traps to be set anywhere in freshwater habitats. The South Australian government claims that its requirement for entrance rings to have a maximum diameter of 7.5 centimetres excludes all air-breathing fauna from traps, but this is simply not true for rakali. Due to their stream-lined shape, most (possibly all) water-rats will fit through a 7.5-centimetre hole, and many of these attractive and intelligent native mammals reportedly drown in South Australia each year.

APMN UPDATE

Field training sessions for the Australian Platypus Monitoring Network remain suspended due to ongoing Covid restrictions. However, you can find everything you need to know to become involved in platypus monitoring by visiting the APMN website (www.platypusnetwork.org.au) – it’s a great way to stay active in these challenging times.

HOLBROOK LANDCARE PLATYPUS VIDEO

The APC recently partnered with Holbrook Landcare Network to produce a short video on practical platypus conservation issues. The video is now available for viewing at: https://www.youtube.com/watch?v=F5UOWchDoIU&fbclid=IwAR2SJRBM7CygPI8M80ghS5g3Y1fIP_OGkVOUKGVBxohE-I5JfIVHn52ftpc

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