

A ROYAL COMEBACK

The recent reintroduction of platypuses to Australia's oldest national park is a cause for hope.

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(unless otherwise noted)



“S he’s about 500m from here,” says Patrick Giumelli. Patrick, a rewilding program ecologist from the World Wildlife Fund (WWF), is tracking platypuses in the Royal National Park, which lies just south of Sydney. While the park—which coincidentally is the world’s second-oldest national park—used to have platypuses in its waterways, there have been no confirmed sightings for decades. Now, though, the VHF antenna which Patrick waves about emits clicking sounds, indicating that a tagged female is nearby. She is one of six females released a couple of weeks earlier, in mid-May 2023, with four males being released into the national park about a week earlier.

These unique egg-laying monotremes—relocated from the New South Wales Bombala and Dalgety regions—will be monitored regularly in their new environment, to track progress or any developments, especially if they reproduce successfully. If so, it would be a vital step for a species that’s experienced a significant habitat loss; roughly a quarter has disappeared in the past three decades.

POPULATIONS IN DECLINE

The species is in dire need of help, and faces a critical decline. Australian researchers believe that platypus numbers have halved over the last fifty years. Platypuses serve as early indicators of the health and stability of water ecosystems. When waterways become polluted or when urbanisation encroaches upon platypuses’ natural habitats, these unique creatures tend to disappear.

One reason behind the local disappearance of this iconic species is said to be a toxic spill in the 1970s on the nearby Princes Highway that flowed into the Royal’s waterways. Another significant factor within the park has been feral animals, particularly foxes, which pose danger to platypuses, especially when the latter is travelling overland between river systems. There’s also the

fact that Australia’s oldest continuously working coal mine, the Metropolitan Mine, lies less than one kilometre upstream of the Royal, and frequent pollution events from the mine have made their way down Camp Gully Creek and into the park. Notably, there was a major pollution event in September 2022—just one of several incidents last year—and it was, in fact, *Wild* editor James McCormack, local in the area, who first raised the alarm with the Environmental Protection Agency (EPA). Subsequent reporting by *Wild* on social media shed light on the pollution, which led to all major media outlets picking up the story. These pollution events can not only increase water turbidity, but they can cause a crash in the number of macro-invertebrates, a key food source for platypuses; frog populations, too, were impacted by the 2022 pollution events (see *Wild*’s Green Pages in Issue #187).

FINDING SUITABLE HABITATS

Recently, rewilding has gained immense popularity, a concept described as the restoration of natural habitats as well as reintroducing lost species to natural parks and other wild areas. But according to Patrick Giumelli, rewilding is as much about getting local communities “interested and engaged in environmental work.” It’s one of the reasons, Patrick says, that the Royal NP was a compelling location for the platypus rewilding program, as the park’s iconic status, and its proximity to Sydney, would mean high levels of community engagement.

But the Royal is only the first step in this new rewilding collaboration between WWF and its partners, including UNSW, which aims to identify multiple suitable habitats for the reintroduced platypuses. As noted previously, platypus habitat has declined markedly, and how many platypuses actually remain in the wilds of eastern Australia still remains a mystery; estimates range



widely, from 30,000 to 300,000. Studying the elusive, nocturnal monotreme is challenging due to its vast range, says Gilad Bino, the UNSW ecologist—considered by many to be a ‘platypus expert’—who has led the research for the rewilding project in the Royal National Park

“We have no idea [how many there are],” says Gilad. What he does know, however, is that “humans are impacting their habitats.” But he adds that the lack of sufficient data makes it difficult to assess the specific threats and take the appropriate measures, hence creating something of a ‘catch-22’. And while there is uncertainty surrounding the total numbers of platypuses, Gilad’s DNA testing of water samples taken from the Royal NP prior to the relocation of the ten platypuses showed the genomes of approximately 200 other animal species; there were no traces, however, of the elusive animal. (While there have been reported sightings of platypuses since their apparent local ‘extinction’, none have been confirmed.)

To ensure the Royal was still suitable for platypuses, before the reintroduction, an ongoing baiting program to rid the area of ferals was conducted, and extensive water-quality testing was carried out to guarantee that a viable platypus population can be sustained.

One of the big issues with water quality has been the ongoing concerns regarding the potential impact of coal waste from the nearby Metropolitan Mine; the EPA is still investigating spills from last year. However, Gilad is having ongoing conversations with the mine, which, according to him, has “cleaned up 98 per cent of the spill” and has taken measures, he says, to prevent further spills. Thus far, says Gilad, toxicity levels in the river system have been “within the parameters”, and the team behind the project perceives the water quality as good. “Coal mines will always impact the environment somehow,” says Gilad, “but through the eyes of the platypuses we are not concerned by the mine.”

(Ed: Several elements of the preceding paragraphs about the Metropolitan Mine’s impact deserve closer scrutiny. The mine has a long history of water pollution, going back decades, if not a century, and even after the egregious pollution incident in September 2022, and the mine promising to improve, there has been subsequent pollution. A November event led to yet another fine being levied by the EPA, and there was even another ‘event’ in August 2023, less than two weeks before this issue of Wild went to print. It remains to be seen whether the mine can ever clean up its act, let alone guarantee “good” water quality. And the extent to which the mine actually cleaned up its recent pollution is definitely open to debate. Still, the platypus program will likely lead to increased scrutiny of the mine, a positive outcome.)

IMAGES - CLOCKWISE FROM TOP LEFT

Patrick Giumelli in the Royal NP tracking recently released platypuses with a VHF antenna

Members of the Taronga Conservation Society release a platypus into the Hacking River. Credit: R Freeman

Gilad Bino, lead ecologist for the program, taking measurements of a platypus. Credit: Platypus Conservation Initiative, UNSW

ONE MORE POSITIVE:

Aside from it being great to see platypuses again in the Royal NP, an additional positive to their reintroduction is the increased scrutiny that will be placed on the nearby Metropolitan Colliery and its waste. A rewilding program like this doesn’t just involve improving platypus habitat; it involves improving the habitats of *all* the other elements of the food chain upon which the platypus depends. Thus, while it may seem that rewilding programs only focus on ‘sexy’ species like platypuses, the success of such programs are utterly dependent on the health of ‘unsexy’ species like macro-invertebrates, and frogs, and insects, and so on. Rewilding involves a ‘whole of food chain’ approach.

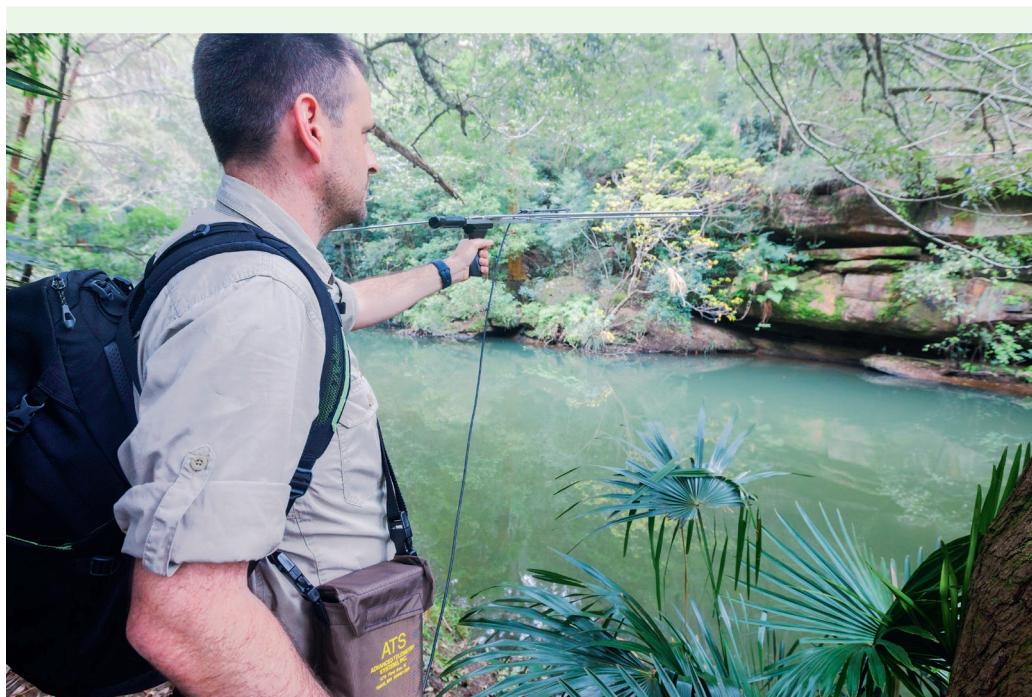
IMAGES - CLOCKWISE FROM TOP

A sedate pool like this in the Hacking River is perfect platypus habitat

Controlling feral predators will be crucial for the program's success

Patrick Giumelli's VHF receiver indicates the presence nearby of tagged platypuses

The logos on Patrick's shirt show another animal that's part of Rewilding Australia's program: the eastern quoll



MONITORING THE SPECIES

As Patrick strolls along the Royal NP's Lady Carrington Drive—a closed-to-cars dirt road that meanders alongside the Hacking River and that plunges into and out of temperate rainforest and drier stands of eucalypts—he continues waving the antenna about. Patrick describes the acoustic transmitters as a “game changer”, a revolutionary technology in monitoring the endangered animal.

“We'll monitor their activity,” Patrick says, “and next year we'll see if they've reproduced on their own, or if we need to repopulate more.”

Happily, one month after the reintroduction, in mid-June, “all ten platypuses are still accounted for.”

“We are really positive about that,” Gilad says, adding that the tagged animals are spreading throughout Hacking River and Kangaroo Creek, a potential habitat totalling about 40km of rivers and creeks.

The ultimate goal of the rewilding project is to closely monitor the species' progress to assess the feasibility of reintroducing platypuses to other areas that have experienced local extinctions or substantial population declines, such as river systems outside Brisbane and Adelaide.

In the face of an ever-changing climate, such reintroductions could become increasingly important, as does preserving existing habitats for platypuses. Devastating events like the Black Summer bushfires, along with the extensive floods that followed, pose challenges, especially as water seeping into platypus burrows potentially leads to the drowning of juveniles that are still in the process of learning to swim. Furthermore, during periods

of drought, the species is prone to starvation unless it finds new pools with sufficient water, and the risk of predation increases when the animals travel overland.

On a positive note, however, the species can coexist with humans, so urbanisation itself is not necessarily the major issue. That said, in normal circumstances, platypuses will travel overland in search of other river systems; if extensive human development surrounds a particular habitat, the animals will struggle to find neighbouring habitats that are suitable. Moreover, it's critical to ensure that water sources such as creeks and rivers remain free-flowing and are not obstructed by, for example, dams.

“That's why it's important to preserve our rivers”, Gilad says. Taking preventive measures to restore water quality and reducing land clearing is vital; the latter often results in higher sedimentation levels in river systems, negatively impacting platypus habitats.

Patrick Giumelli is hopeful for the future. As he continues along the Hacking River, he points out where fallen dead trees have created pools of green water. These pools, a couple of metres deep, are enriched with nutrients that support the growth of macroinvertebrates. The presence of these mini dams along the Hacking River, and its adjacent tributaries such as Kangaroo Creek, creates a perfect home for platypuses. It's an environment in which, hopefully, the species can thrive and reclaim its lost territory, and then potentially spread to areas where it hasn't been seen for decades. **W**

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