Platypus in **decline**

AUSTRALIAN CONSERVATION FOUNDATION

Front cover. Researcher Dr Gilad Bino with platypus. *Photo*. Doug Gimesy.
Below. Platypus. *Photo*. Doug Gimesy.

Habitat destruction and climate change are taking a toll on one of our most iconic animals. This summary report outlines why the platypus should be listed as a nationally threatened species under our national environmental law.

We acknowledge the Traditional Owners of this country and their continuing connection to land, waters and community. We pay respect to elders both past and present.

Key **findings**

The elusive platypus is one of Australia's most unique and iconic animals. They are among the most evolutionary distinct species on the planet — meaning there is nothing quite like them on earth.

But researchers fear platypus numbers are in decline. It is estimated that over the past 30 years the area occupied by the species has shrunk by at least 22%, or about 200,000 km2, which is an area almost three times the size of the state of Tasmania.

Despite being such a unique animal, accurate analysis of the conservation status of the platypus has been hampered by limited knowledge. But a landmark assessment from researchers at the University of New South Wales (UNSW) has found platypuses have been facing increasing threats since European colonisation. These threats are widespread, reinforce one another, and are expected to increase into the future.

The UNSW report, commissioned by Australian Conservation Foundation, finds platypuses likely meet the criteria for listing as a nationally threatened species under our national environmental law, the Environment Protection and Biodiversity Conservation Act 1999, in the 'vulnerable' category.

This is due to the combination of existing declines in platypus populations and the fact primary threats to the species show little sign of abating and are largely irreversible.

While our national environmental laws need to be significantly strengthened, listing platypuses as a threatened species is a critical first step to conserving this iconic animal and setting it on a path to recovery.

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An **iconic animal**

Platypuses are a central part of Indigenous identity. Also known as Matakupay, Mallangong, Tambreet, Gaya-dari, Boonaburra and Lare-re-lar, platypuses hold special significance for a number of First Nations. Sadly, the species has begun to disappear from areas where it holds cultural importance.

Platypuses have evolved incredible traits. These egg-laying, duck-billed mammals use electroreception like a sixth sense to detect food underwater. The males have a venomous spur on their hind legs. And it was recently discovered they even glow under ultraviolet light.

They live across Australia's eastern seaboard, from tropical north Queensland down to Victoria, and across most of Tasmania. They can be found in healthy rivers and streams that contain suitable habitat for them to swim and forage on the riverbed for food.

Platypuses make their homes in the riverbanks, preferring sheltered areas of native vegetation where they can dig burrows, nest and raise their young. In the wild it is thought platypuses live for an average of ten years — although the oldest recorded was 21 years old.

Right. Werribee River. *Photo*. Annette Ruzicka / MAPgroup.
Left. Platypus. *Photo*. Doug Gimesy.

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Previous page. Platypus swimming. *Photo*. Doug Gimesy.

Evidence of **platypus decline**

Areas of healthy habitat for platypuses are shrinking dramatically. It is estimated that in the past 30 years the area occupied by the species has shrunk by at least 22% — or about 200,000 km2 — an area almost three times the size of Tasmania.

The decline in platypus distribution has been most pronounced in areas where natural river systems and water flows have been significantly modified. The Murray-Darling basin, which has been seriously impacted by the over-extraction of water, prolonged drought and climate change, has experienced one of the largest declines. Platypus occurrence across the basin has declined by around 30% over the past 30 years. For similar reasons, platypuses have declined dramatically in South Australia where it is listed as 'endangered'.

Our urban waterways are not faring much better. Rapid urban growth and drought are thought to seriously impact populations in the areas surrounding Melbourne. It is now estimated there has been a 50% decline in platypus occupancy of the length of waterways in the five main catchments surrounding Melbourne when looking at historical records. In some catchments, the average decline is predicted to be as high as 65% since 1995.

On mainland Australia, New South Wales and Queensland fared the worst, with 32% and 27% reductions in platypus occupancy respectively. Despite significant declines surrounding Melbourne, Victoria recorded a statewide decline of approximately 7.1%.

Accurate estimates of platypus numbers are difficult to derive, but it's estimated there are now between 176,460 and 317,628 platypuses in the wild. Further analysis is needed, particularly in the northern part of Queensland, to improve estimates. However, based on existing data on threats, such as land clearing and river regulation, population models predict the effective minimum population size* of platypuses has declined by at least 45% to 58% over the past 50 years. Most of the primary threats driving this decline — new dams, water over-extraction, land clearing and suburban sprawl — are increasing in key parts of the species range.

*Minimum viable population (MVP) is a lower bound on the population of a species, such that it can survive in the wild.

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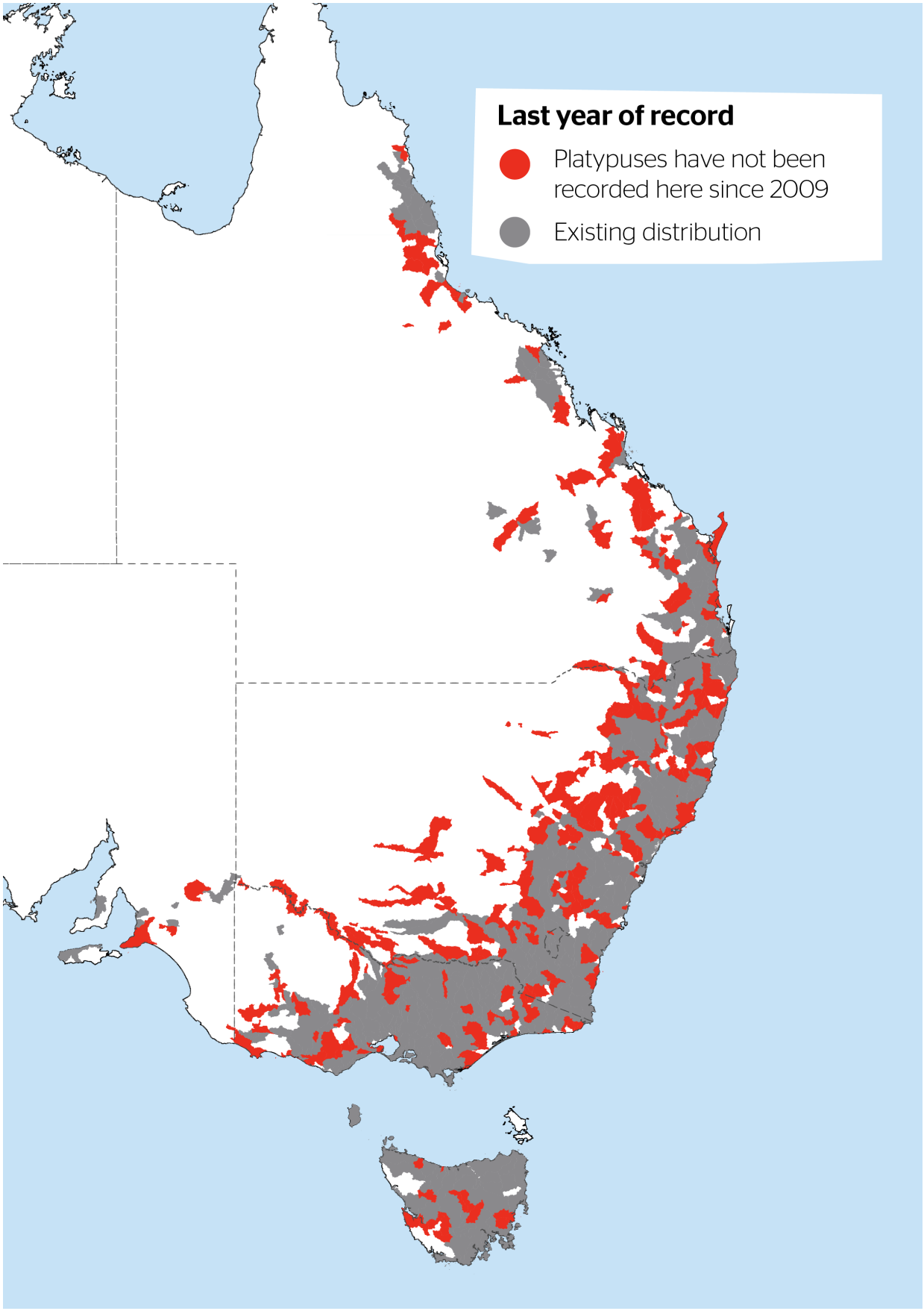
Distribution



Below. Bushfire desruction. *Photo*. Doug Gimesy.

Underlying **threats**

Despite being such a unique animal, there has been limited analysis of the overall conservation status of the platypus. A landmark assessment by researchers from UNSW has found platypuses have been facing increasing threats since European colonisation. These threats are widespread and reinforce one another.

One of the most significant threats to platypuses has been the destruction, degradation and fragmentation of their habitat.

New dams, the over-extraction of water from rivers, land clearing, increased sedimentation and suburban sprawl are the main factors driving the decline. Foxes and feral cats also kill many platypuses, particularly during severe drought. Others drown in closed freshwater traps designed to catch yabbies and fish.

Natural factors also contribute to the decline — with drought and the last summer's bushfires having significant adverse impacts on habitat.

Climate damage now represents a serious risk to the future of platypuses. Increased severity of droughts, water shortages and other climate change impacts will continue to degrade habitat, limit dispersal corridors and force platypuses to move to areas where they can survive the climate — ultimately leading to reductions in platypus populations and occupancy. This is especially true in northern parts of platypus habitat range, which includes most of Queensland.

Conservation status

The platypus was listed as 'near threatened' by the International Union for the Conservation of Nature in 2016 after evidence emerged of local extinctions across the country. In South Australia, platypuses are currently listed as 'endangered' under the National Parks and Wildlife Act 1972. In Victoria, the state government Scientific Advisory Committee recently made a recommendation to list platypuses as a vulnerable species after concluding populations are in steady decline.

The UNSW report finds platypuses likely meet the criteria for listing as a nationally threatened species under our national environmental law, the Environment Protection and Biodiversity Conservation Act 1999, in the 'vulnerable' category. This is due to the combination of existing declines in platypus populations, and the fact that primary threats to the species show little sign of abating and are largely irreversible.

Research shows platypuses are susceptible to 'extinction debt', which is when negative impacts on species ecology takes time to reveal itself. There can be a lag between the isolation of a healthy river habitat, land clearing or low water flow, for example, and a reduction in observed platypus populations. The challenge is, once platypuses disappear from a section of river, there is no guarantee of recolonisation, especially in the absence of adequate connectivity with existing populations. These impacts will then reverberate through future generations of the species.

While our current national environmental laws need to be significantly strengthened, listing the platypus as a threatened species is a critical first step to conserving the species and, hopefully, setting it on a path to recovery and persistence.

Read the full report:

A new generation of strong national environment laws and institutions can protect our threatened wildlife and the habitat they need to survive

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