

Australia's 'irreplaceable' platypus threatened by dams: study

November 6 2022, by Juliette COLLEN



'Platypuses are arguably the most irreplaceable mammal,' the lead author of the new study says.

The future of the platypus, a unique duck-billed, egg-laying mammal only found in Australia, is under threat because they cannot climb over

tall river dams, according to a new study.

The platypus is an oddity in many ways. As well as its duck-like bill and egg-laying, it is a rare venomous mammal, brandishing centimeter-long poisonous spurs on its [hind legs](#).

They are also one of the only mammals who can locate prey by detecting electric fields and whose fur glows blue-green under an ultraviolet light. Platypuses even have 10 sex chromosomes—most mammals have two.

But the number of platypuses has fallen by 50 percent since Europeans settled Australia more than two centuries ago, according to previous research.

Its habitat has increasingly come under threat from climate change-fuelled [extreme weather events](#) including drought and fire. They are also preyed upon by [invasive species](#) such as foxes, cats and dogs.

A new study published in the journal *Communications Biology* this week identified a new threat: platypuses are not able to climb over large, human-made dams in rivers.

The study's lead author, Jose Luis Mijangos of the University of New South Wales, told AFP that "there might be as few as 30,000 mature platypuses" left in Australia.

More than three quarters of Australia's dams measuring over 10 meters (33 feet) are in regions where platypuses live, the study said.

Some platypuses, which mostly live in rivers and streams but can use their webbed feet to walk on land, have been reported to be able to cross smaller dams.

But they cannot get over taller dams, isolating the animals from each other, the study found.



A platypus held by the researchers near a river dam in Australia.

Increased inbreeding

The researchers took the DNA samples of 274 platypuses from nine rivers in the states of Victoria and New South Wales. Five of the rivers have dams between 85 to 180 meters tall, while the others flow unimpeded.

Comparing the samples, they found that [genetic differences](#) were four to 20 times higher in platypus populations around the dammed rivers compared to those not living near dams, indicating the first group rarely mixed with others.

They also estimated that the genetic differences had increased in every platypus generation since the nearby dams had been completed.

"These results suggest that almost no or no platypuses have passed around the dams since they were built," Mijangos said.

As a result, "populations are fragmented, which means that the ability to recolonise available habitat or migrate to areas with more suitable conditions is restricted," he added.

"Fragmentation also simultaneously reduces both local population size and [gene flow](#), each of which is expected to lead to increased inbreeding and reduction of the genetic variation."

To address the problem, the researchers propose structures be built to

help the platypuses scale the dams. They also suggested that humans could relocate some platypuses to promote diversity.

After all, the [platypus](#) is too weird to be lost.

"Platypuses are arguably the most irreplaceable [mammal](#) because they have a unique combination of features," Mijangos said.

More information: Luis Mijangos, Fragmentation by major dams and implications for the future viability of platypus populations, *Communications Biology* (2022). DOI: [10.1038/s42003-022-04038-9](https://doi.org/10.1038/s42003-022-04038-9).
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