

## A fish in the desert—risky swims are key to survival

October 19 2015



Credit: Krys Mossop

Despite the extreme environment, Australia's iconic Lake Eyre Basin is home to a range of aquatic animals – including fish. In fact, during massive floods, the desert is teeming with them. But such flood events are very rare. So, how do fish survive in the meantime?

A new study led by Monash University researchers has revealed that for one fish species, the desert goby, survival hinges on constantly moving to new water sources.

Lead researcher, Monash PhD student Krystina Mossop explained that despite their small size and poor swimming ability, desert gobies use short-lived flood events to move incredibly well between locations.



"This is important because desert waterholes are constantly drying up, and to survive in the long term, the fish need to constantly track the location of water in their environment," Ms Mossop said.

To explore how the fish moves around its arid landscape, the researchers drew on the information stored in the goby's DNA: an excellent tool because it captures signatures of past environments in modern organisms.

"By mapping the genetic variation of populations across the landscape, we can see which populations are more connected, and which are more isolated. This lets us identify where there are barriers that stop fish from moving between locations," Ms Mossop said.

By studying the goby's DNA, the researchers discovered that gobies from very different parts of the landscape were genetically similar, demonstrating that populations are much more connected than anticipated.

"What this probably shows is that because gobies are tough little fish, they can survive in drying and shallow water long enough to 'leapfrog' their way across the landscape," said senior co-author, Associate Professor Bob Wong, also in the School of Biological Sciences at Monash University.

It's that same 'little battler' character that allows them to use the harsh waters that exist during extended drought periods.

"These findings have implications for conserving species like the desert goby, and related <u>fish</u> that are endangered by habitat loss and degradation through human use of the desert's scarce water resources," said senior co-author, Dr David Chapple.



The research team will now build upon these findings by exploring how the desert goby's behaviour helps them undertake their risky across-<u>desert</u> movements.

The research was published in the Journal of Biogeography.

**More information:** Krystina D. Mossop et al. Dispersal in the desert: ephemeral water drives connectivity and phylogeography of an arid-adapted fish, *Journal of Biogeography* (2015). DOI: 10.1111/jbi.12596

Provided by Monash University

Citation: A fish in the desert—risky swims are key to survival (2015, October 19) retrieved 3 May 2024 from <u>https://phys.org/news/2015-10-fish-desertrisky-key-survival.html</u>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.