

Climate change threatens freshwater fish

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Murdoch researchers examine a site in the Blackwood River catchment.

(Phys.org) —New research has revealed that Western Australia's drying climate will impact fish migrations, putting further pressure on a number of native freshwater fish species.

Scientists from Murdoch University's Freshwater Fish Group and Fish Health Unit said the new paper shows there is a clear relationship between river flow and the spawning migrations of potamodromous fishes (those that migrate within river systems).

"Australia's south west has seen major reductions in rainfall since the 1970s, leading to a decline in surface flow of around 50 per cent," said lead author Dr Stephen Beatty.

"The ongoing flow reductions will result in these [fish species](#) migrating

less and cause a loss of suitable spawning habitat. As a result, declines in their abundances can be expected."

Scientists conducted a four year study, focusing on the Blackwood River, to track the migrations of the Western Pygmy Perch, Balston's Pygmy Perch, Western Minnow and the Nightfish. The researchers then assessed the relationship between fish migrations within rivers and the variable environmental conditions.

"The amount of surface discharge was the best predictor of the strength of the annual spawning migrations of most species," Dr Beatty said.

"With surface flows projected to continue to diminish in this region, our findings have major consequences for the future of these fish species."

Dr Beatty said that as top order consumers, these fish species play an important part in the wider ecosystem. By feeding on larvae, these species also help control troublesome insects such as mosquitoes and midges.

The study painted an equally grim picture of the drier season, when the [fish](#) seek refuge in pools of water. The researchers predict that the amount and quality of refuge pools will also continue to decline due to climate change.

With rapid population growth and salinity also putting pressure on aquatic ecosystems, Dr Beatty said it was important that all Western Australians consider their water use.

"Every effort should be made to ensure that existing stressors are addressed and that abstractions of surface and groundwater consider the sensitivity of fishes to changes in hydrology," he said.

The study will be published in an upcoming issue of the journal *Global Change Biology*.

More information: [onlinelibrary.wiley.com/journal/1111/\(ISSN\)1365-2486](https://onlinelibrary.wiley.com/journal/1111/(ISSN)1365-2486)

Provided by Murdoch University

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