

Plunging fish numbers linked to dam releases

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A significant decline in the numbers of native fish in Australia's Murray-Darling Basin may be linked to released dam water being too cold for breeding.

This is just one of the findings from a Griffith University led study which found current water releases back into the Murray-Darling system limit fish reproduction and therefore impact freshwater biodiversity.

Griffith University Research Fellow Dr Rob Rolls said the results, published in *Freshwater Biology*, throw cold water on the notion that large dam releases compensate for the effects of interrupting natural water flows. And it's not just seasonal flooding which is important; the natural low flow periods matter too.

"Golden perch an iconic species that significant value for [recreational fishing](#) and it is often assumed that large floods are necessary to initiate spawning and recruitment of golden perch and many other fish," Dr Rolls said.

"But we found that more than 90% of golden perch [juveniles](#) occurred in unregulated lowland rivers in the northern Murray-Darling Basin, which naturally stop flowing for weeks or months, while regulated reaches now flow constantly.

"Restoring these natural low flow periods is critical because it is these shallow, warm reaches of waterways which produce the food fish depend upon."

The team also found that releases from the Pindari [Dam](#) on the Severn River did not encourage fish spawning because the water is much colder compared with nearby unregulated rivers.

"Stream temperature has a significant effect on spawning opportunities for fish, and cold water released from the bottom of dams may limit the benefits of environment flows," Dr Rolls said.

"The [negative impact](#) of this could be minimised by modifying dams so the warmer water from the surface of reservoirs is released rather than from the bottom."

More information: Rolls, R.J., Grown, I.O., Khan, T.A., Wilson, G.G., Ellison, T.L., Prior, A., Waring, C.C., 2013. Fish recruitment in rivers with modified discharge depends on the interacting effects of flow and thermal regimes. *Freshwater Biology* ([doi:10.1111/fwb.12169](https://doi.org/10.1111/fwb.12169))

Provided by Griffith University

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