

Water deficiency in rivers could profoundly harm aquatic life

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Research led by [Mark Ledger](/staff/profiles/gees/ledger-mark.aspx) has shown that critically low water levels in many rivers could lead to the partial collapse of food chains that support aquatic life. The research, which has been published in the journal *Nature Climate Change*, forms the conclusion to one of the longest experiments on drought ever conducted in freshwaters.

The team periodically lowered water flow in artificial streams, mimicking severe drought conditions in natural running waters. They looked at all species in the river, studying the whole food chain, measuring the growth rate of the animals in all populations.

Mark Ledger said 'We found that drought changed the make-up of the invertebrate life in the stream community and reduced its diversity by around 25%.'

He added that many insects, such as mayflies, were severely affected by drought, as were many large predatory invertebrates, which could not escape. He continued: 'Our study demonstrates that the loss of invertebrates limits the flow of food energy through the food chain, with potentially profound consequences for the health of river ecosystems.'

'We discovered that, in particular, drought had negative effects on large bodied invertebrates, an important food source for fish, which has significant implications for fisheries.'

Co-author [Alexander Milner](/staff/profiles/gees/milner-alexander.aspx), added: 'These findings demonstrate that the future intensification of drought, similar to that seen in the UK earlier this year and ongoing in the central and midwestern states of America, can be expected to have major effects on both biodiversity and ecosystem processes in streams and rivers.'