

# Research shows Jaws didn't kill his cousin

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A fossil of a jawless fish. Credit: Emma Randle, University of Manchester

New research suggests our jawed ancestors weren't responsible for the demise of their jawless cousins as had been assumed. Instead Dr Robert Sansom from The University of Manchester believes rising sea levels are more likely to blame. His research has been published in the journal *Proceedings of the Royal Society B*.

He says: "When our jawed vertebrate ancestors overtook their jawless relatives 400 million years ago, it seems that it might not have been through direct competition but instead the inability of our jawless cousins to adapt to changing environmental conditions."

In this research, Dr Sansom, PhD student Emma Randle and Phil

Donoghue from the University of Bristol studied the patterns of diversity of fossil [jawless fish](#). These bony fish with a tank like construction (ostracoderms) were dominant and diverse in ancient seas. The team found that patterns of ostracoderm diversity were correlated with changing environmental and geological conditions; the fish were strongly reliant on the availability of shallow water seas and ecosystems.

Dr Sansom says: "Our research suggests the dependence of these armoured fish on shallow environments is likely to be a factor behind their demise and eventual extinction in the Devonian period when sea levels rose."

The findings also suggest the jawless [fish](#) could have existed earlier than previously thought.

Dr Sansom explains: "Understanding the relationship between biodiversity and changing conditions at this time reveals a long missing fossil record for our jawless cousins. It is possible that they could have radiated and evolved up to 20 million years before their first known occurrences as fossils."

He continues: "As such, using biological and geological data helps us understand an important evolutionary event and reconstruct our own origins as [jawed vertebrates](#)."

**More information:** "Discriminating Signal from noise in the fossil record of early vertebrates reveals cryptic evolutionary history"

*Proceedings of the Royal Society B*, [rspb.royalsocietypublishing.org/.../1098/rspb.2014.2245](http://rspb.royalsocietypublishing.org/.../1098/rspb.2014.2245)

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