

Researchers reveal the Taieri's hybrid history

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This image shows four different species of galaxiid from the Taieri River.
Credit: Richard Allibone

New Zealand's iconic Taieri River is a river of two halves, according to a surprising new study led by University of Otago scientists.

The researchers found that the modern Taieri, with its distinctive loop round Central Otago's Rock & Pillar range, was formed only a few hundred thousand years ago—a 'blink of an eye' in geological terms. This dramatic geological change was triggered when mountain uplift diverted the Kye Burn—which previously drained southwest through the Teviot Valley—into what is now the Taieri.

The researchers, including Zoology Professors Jon Waters and Graham Wallis, and Geology Professor Dave Craw, set out to unravel the history of the Taieri using a combination of scientific evidence.

"Fish biologists have long been intrigued by the distribution of native species in the Taieri, where there is one group of species in the upper parts of the river and a different group in the lower reaches," Professor Waters says.

The researchers combined evidence from [fish](#) DNA with [geological evidence](#) of river history, to show that these fish (galaxiids, related to whitebait) actually once lived in separate rivers, but came together as a result of the two rivers merging.

Professor Craw notes that "while geologists have often been fascinated by the distinctive shape of the modern Taieri—we are only now beginning to understand how and when that shape evolved."

Genetic studies on the region's native fish also indicate that this river reversal led to the evolution of a unique, isolated fish, the Teviot River galaxiid—one of the rarest [freshwater fish](#) known in New Zealand.

This unexpected Teviot fish finding mirrors the team's previous discovery of the Nevis River 'Smeagol galaxiid', another unique fish that evolved following a river reversal event.

The team's findings have just been published in the international research journal *Quaternary Science Reviews*.

Provided by University of Otago

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