

Geologists spy an eighth continent: Zealandia

This mostly submerged world should be recognized alongside Africa, Australia and others, argue some researchers.

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NASA/JSC

New Zealand (south island on the left) is part of what some scientists argue should be a new continent.

Beneath the waves in the southwest Pacific Ocean lies a mostly hidden realm — dubbed Zealandia — that deserves to be called a continent, geologists say.

Geophysical data suggest that a region spanning 5 million square kilometres, which includes New Zealand and New Caledonia, is a single, intact piece of continental crust and is geologically separate from Australia, a team of scientists from New Zealand, Australia and New Caledonia argue in the March/April issue of *GSA Today*¹. (see 'Hidden crust')

“If you could pull the plug on the world’s oceans, then Zealandia would probably long ago have been recognized as a continent,” says team leader Nick Mortimer, a geologist at GNS Science in Dunedin, New Zealand.

However, there is no international body in charge of designating official continents, and so the researchers must hope that enough of their colleagues agree to recognize the landmass. Otherwise, their proposal could remain more of a theoretical wish than a radical reshaping of what every child has to learn in geography class.

“The results are pushing us to rethink how broadly we can or should apply the established definition of geological continental landmasses,” says Patricia Durance, a mineral geologist at the GNS Science office in Lower Hutt, New Zealand.

Not a mash-up

Mortimer and his colleagues have been making the case for Zealandia for more than a decade, in talks, popular articles and books; the latest paper is their most technical synthesis yet. In it, they report that Zealandia began to peel away from the supercontinent of Gondwana starting about 100 million years ago.

The rift gave Zealandia its independence, but it also pulled and thinned the crust, causing the area to sink, and dooming most of it to a watery existence. Today, only about 6% of it remains above water, as New Zealand and New Caledonia.



Satellite [maps made using Earth's gravitational field](#) clearly show that Zealandia is a coherent geographical feature stretching from near Australia's northeastern coast well past the islands of New Zealand, Mortimer says. Sea-floor samples reveal that Zealandia consists of light continental crust and not the dark volcanic rocks that make up nearby underwater plateaus. The area seems to be structurally intact, rather than a mash-up of different continental-crust fragments.

There is no widely accepted definition of a continent, and geographers and geologists differ on the question. (Geographically, Europe and Asia are considered separate continents, whereas geologists consider them the single landmass of Eurasia.) "One of the main benefits of this article is that it draws attention to the arbitrary and inconsistent use of such a fundamental term as continent," says Brendan Murphy, a geologist at St. Francis Xavier University in Antigonish, Canada.

Zealandia will face an uphill battle in garnering the same popular name recognition as Eurasia, Africa, Antarctica, Australia and North and South America. "Claiming that Zealandia is a continent is a bit like stamp collecting," says Peter Cawood, a geologist at Monash University in Melbourne, Australia. "So what?"

Whatever it is called, Mortimer says, studies of Zealandia should help biogeographers to better understand how New Zealand's endemic plants and animals arose — and give geologists a boost in learning how continental crust can be reshaped.

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References

1. Mortimer, N. *et al.* *GSA Today* <http://dx.doi.org/10.1130/GSATG321A.1> (2017).