

Ghostly traces of massive ancient river revealed

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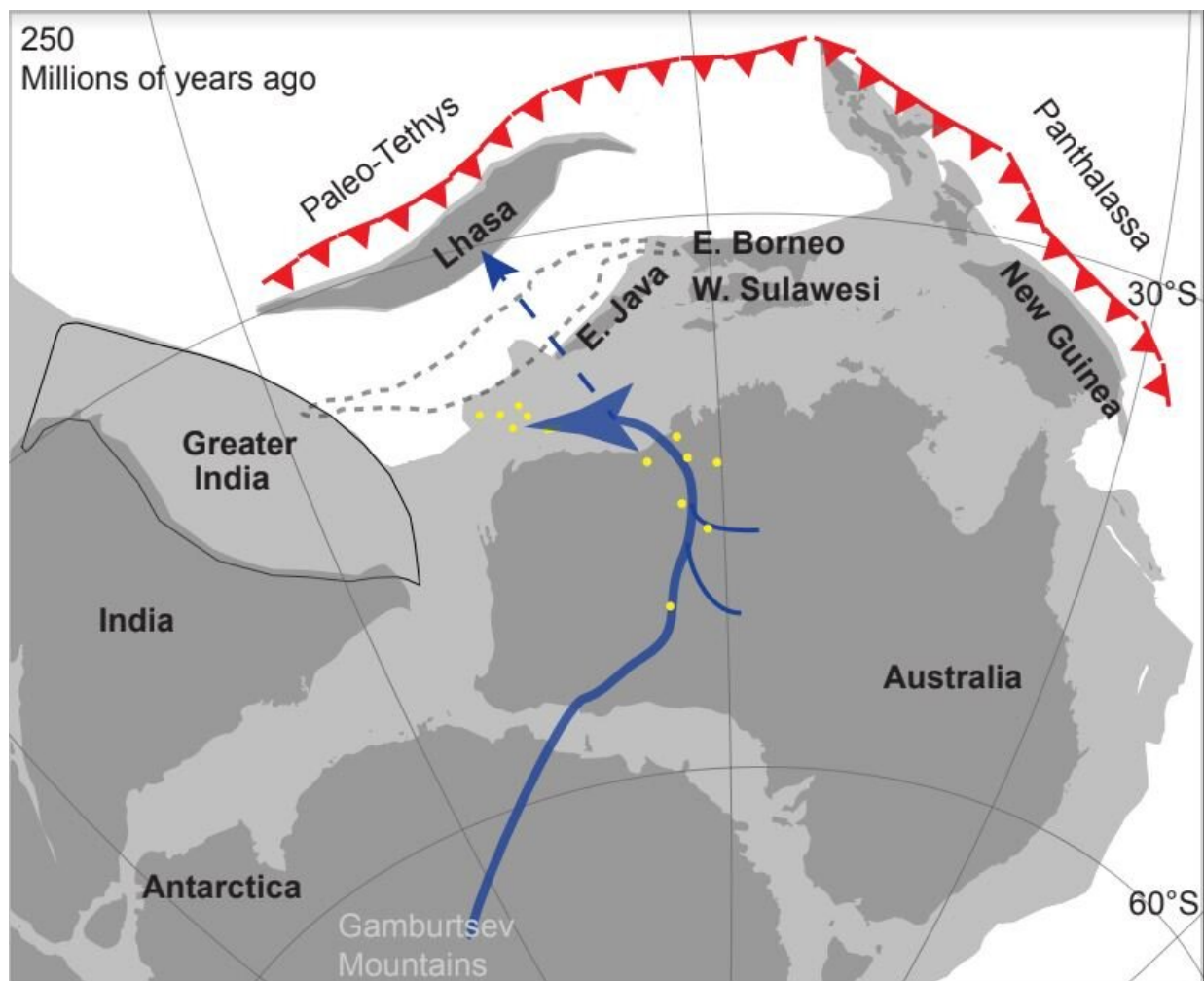


Figure that depicts the configuration of the Gondwanan supercontinent (250 million years ago) and the location of the ancient river system. Credit: Science in Public

Using zircon crystals, researchers have discovered the route of a massive ancient river that could help find new reservoirs of fossil fuels and suggest how modern rivers might change over time.

More than two thirds of the worlds' [major cities](#) are located in coastal deltas. How they change over time can impact communities that live around them.

"Geologists can use ancient deltas to understand how modern river systems should be behaving" says Dr. Sara Morón from the University of Sydney who led the research.

Discovering where it once flowed is of a lot more than historical interest.

"With no more [mountains](#) to erode, the river eventually dried up, leaving behind its '[delta](#)' – a thick deposit of sediments where it met the ancient ocean. That delta now hosts large deposits of fossil fuels."

Sara and colleagues were able to trace the route of the gigantic watercourse that ran across it by analyzing tiny crystals called zircons, a mineral that can be read like a geological clock.

The river—which remains unnamed—once stretched for more than 4,000 km from East Antarctica to the modern town of Broome in the distant Kimberley region of Western Australia.

When the ancient river ran, Australia and Antarctica were joined together as part of the great super-continent known today as Gondwana.

The researchers suggest that it was one of the 10 longest lived in the history of Earth and that it flowed for an estimated 200 million years before disappearing.

The research was recently published in the journal *Geology*, the highest-ranking journal for geosciences globally.

More information: Sara Morón et al. Long-lived transcontinental sediment transport pathways of East Gondwana, *Geology* (2019). [DOI: 10.1130/G45915.1](https://doi.org/10.1130/G45915.1)

Provided by Science in Public

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