

Rangitoto's buried past may reveal future eruption risk

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University of Auckland scientists are drilling deep into Rangitoto Island to investigate the volcano's active past and provide a better understanding of the future risk to Auckland from eruptions.

Funded by EQC, the study is led by Associate Professor of Geology Phil Shane and researchers from the University's School of Environment. The team are extracting continuous core samples up to 150m below the island's surface.

"So far we have drilled to a depth of 40 m and found numerous thin lava flows. This shows how the volcano was built-up with time. It's surprising the number of lava flows recorded. We think we've still got another 80-100 metres to go," Dr Shane says.

From samples taken, scientists will learn more about the duration and frequency of eruptions on Rangitoto over the past 1,000 years, information that will help hazard and risk planners such as Civil Defence significantly improve models of future volcanic activity.

"While we can't predict the future, our research so far raises questions about if there was future activity in Auckland, how long would it last and could it be for longer periods rather than just months?"

Recent [volcanic ash](#) studies by the team resulted in the discovery that Rangitoto was more active for much longer than previously thought. As with other small basaltic volcanoes around the world, the island was

thought to have erupted only once or twice about 500 years ago. However, studies of volcanic ash in sediments on the floor of Lake Pupuke show the island erupted intermittently or semi-continuously from about 1,500 years to 500 years ago.

This latest research will give a clearer idea not only of Rangitoto's active past but in particular whether past eruptions were explosive or non-explosive.

"Rangitoto might have been erupting for nearly a thousand years and that's a long time for this type of [volcano](#). That radically changes the perception of potential future hazards in the region and the implications for Auckland as New Zealand's largest city," Dr Shane says.

Rangitoto is the youngest and largest of the 50 volcanoes that make up Auckland's volcanic field. It is 260m high and 5.5km wide.

Provided by University of Auckland

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