

# Australian researchers find huge lakes beneath largest east Antarctic glacier

Scientists say research will help predict how glaciers' melting will affect oceans

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Scientists have found lakes beneath the Totten glacier. Photograph: Paul Winberry/Australian Antarctic Program

Australian researchers have discovered huge underwater lakes beneath the largest glacier in east **Antarctica**.

The lakes were detected by scientists setting off small explosives 2m below the surface of the Totten glacier and listening to the reflected sound.

The Australian Antarctic Division glaciologist Dr Ben Galton-Fenzi said the research was critical to helping scientists predict how the melting of Antarctic glaciers would change the world's oceans.



East Antarctica glacial stronghold melting as seas warm

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The Totten glacier is 30km wide and up to two kilometres thick, and has the potential to raise sea levels by seven metres.

“The explosives were a sound source for us ... and it would then echo off different layers in the ice,” Galton-Fenzi told the Guardian.

“We placed geophones [a series of microphones] along the surface of the glacier to listen to the reflected sound, giving us a picture of what lies beneath the ice.”

He said the speed glaciers travel at is determined by what they move across.



Drilling at the Totten glacier, Antarctica, 2019. Photograph: Paul Winberry/Australian Antarctic Program

“If there’s bedrock under the glacier, it’s sticky and will move more slowly, but if there’s water or soft sediments, the glacier will move faster,” he said.



Galton-Fenzi said the next step for researchers would be to drill down to take a sample of the lakes but he lamented there was no funding certainty for future research.

“This is the single biggest problem we need to face and have answers to over the next couple of decades,” he said.

“I’m not just a scientist saying ‘I need more money’ ... I’ve got kids who are six and eight and [climate change] is a real threat for them.”

The scientists, who were based at Casey research station, were among more than 550 expeditioners who travelled with the Australian Antarctic Program over the southern summer, working on more than 56 projects.