

'Gateway to the underworld crater' is helping scientists map the Earth's climate history

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Batagaika Crater in Siberia. Credit: Alexander Gabyshev

A geographer from the University of Sussex who is researching a huge crater in Siberia, which is expanding at a rapid rate, believes the huge hole in the ground will help scientists to map the history of the Earth's climate.

The Batagaika Crater, a one kilometer-long and 328 feet deep mysterious megaslump, which started to form in 1960s after a chunk of forest was cleared and the land sunk, is one of the coldest places on Earth and is home to permafrost which has helped to preserve ancient soils for thousands of years.

The [crater](#), one of the deepest ever found, is deemed 'the doorway to the underworld' by the local Yakutian people who have watched it expand rapidly over the past few years as higher temperatures have thawed the [frozen soil](#).

A recent study led by the University of Sussex has dated two forest layers of the crater's frozen soil as being around 125,000 to 200,000 years old. The researchers hope this will enable scientists to compare the data from similar sites in Greenland, China, Antarctica – so they can reconstruct a history of the Earth which will provide them with vital details about [climate](#) change.

Professor Julian Murton from the University of Sussex said: "The frozen soils we have discovered in this crater are some of the best preserved and oldest ever to be found in permafrost regions.

"Ultimately, we're trying to see if [climate change](#) during the last Ice Age [in Siberia] was characterised by a lot of variability: warming and cooling, warming and cooling as occurred in the North Atlantic region.

"If we can understand what the ecosystem was like 125,000 and 200,000 years ago we might get some inkling into how the environment may change now as our climate warms."

More information: Julian B. Murton et al. Preliminary paleoenvironmental analysis of permafrost deposits at Batagaika megaslump, Yana Uplands, northeast Siberia, *Quaternary Research* (2017). [DOI: 10.1017/qua.2016.15](https://doi.org/10.1017/qua.2016.15)

Provided by University of Sussex

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