

# Norfolk's glaciers

## The Blakeney Esker Project

Norfolk's glaciers may have long gone, but Anna Jarrow finds their signature writ large across the landscape.

Imagine you are standing on a glacier. If you look to the north all you can see is ice. To the south, the front of the glacier is advancing over a gently undulating landscape. It's so cold, you might think you're in Iceland, but in actual fact you're on the north Norfolk coast. It's not present day; you're in the middle of a cold period that occurred within the last half million years. Around 100 metres beneath your feet lies a long winding tunnel, at the base of the glacier. In the tunnel a fast flowing river of glacial water bubbles and gushes beneath the ice. The flow of water rises and falls with the seasons and carries with it sand and gravel. When the river slows, the sand and gravel fall to the riverbed. This will eventually fill the tunnel.

Back to the present day, and although the glaciers have long since retreated, a meandering sand and gravel ridge up to 20 metres high and 3.5 kilometres long, known as an esker, remains as a prominent feature on the coastal landscape, near the village of Blakeney.

Who in this sleepy village knows the esker's murky past? The British Geological Survey (BGS) is currently mapping the geology of north Norfolk, a region that has been shaped by glacial processes. Glacial-interglacial cycles have controlled the Earth's climate during the last 800,000 years, and ice sheets have advanced into the region, on at least five occasions during this period, each

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Glaciers at Jökulsárlón glacial lagoon, in present-day Iceland.

depositing fresh material. Therefore, the geology of north Norfolk provides a unique insight into past climate change. Extraction of sand and gravel from the esker has left some really useful exposures, providing us with more information about how the esker was created. Obviously, as geologists, we think the esker provides a fascinating glimpse into the region's glacial past, but what about the local people and visitors? Would they know what they are looking at when they see the large ridge covered in gorse on the horizon? Probably not, but they might be interested. But how do you raise public awareness of a geological feature without covering it with large flashing signs, affecting the natural beauty of the area?

In autumn 2005, BGS, Norfolk County Council, and Murray Gray of Queen Mary, University of London, started working together to produce a website for both teaching and to inform the general public, as well as a new noticeboard on the esker, to replace the existing tired one.

**Find out more**  
[www.bgs.ac.uk/blakeney](http://www.bgs.ac.uk/blakeney)

Following consultation with local schoolteachers, we developed the Blakeney Esker Explored website to provide free downloadable teaching aids to support A-level geography teaching. Topics covered are climate change, esker formation, biodiversity at the esker, and eskers and man. The aids can easily be modified for teaching different age groups. But the site isn't just for teachers; others may find the aids an interesting read, and there are also photographs, recommended further reading and a printable leaflet providing an overview of the topics covered. And those who can't make it to Norfolk, can even go on a virtual fieldtrip of the esker.

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