Huge tsunami with 20 meter waves may have wiped out Stone Age communities in Northumberland

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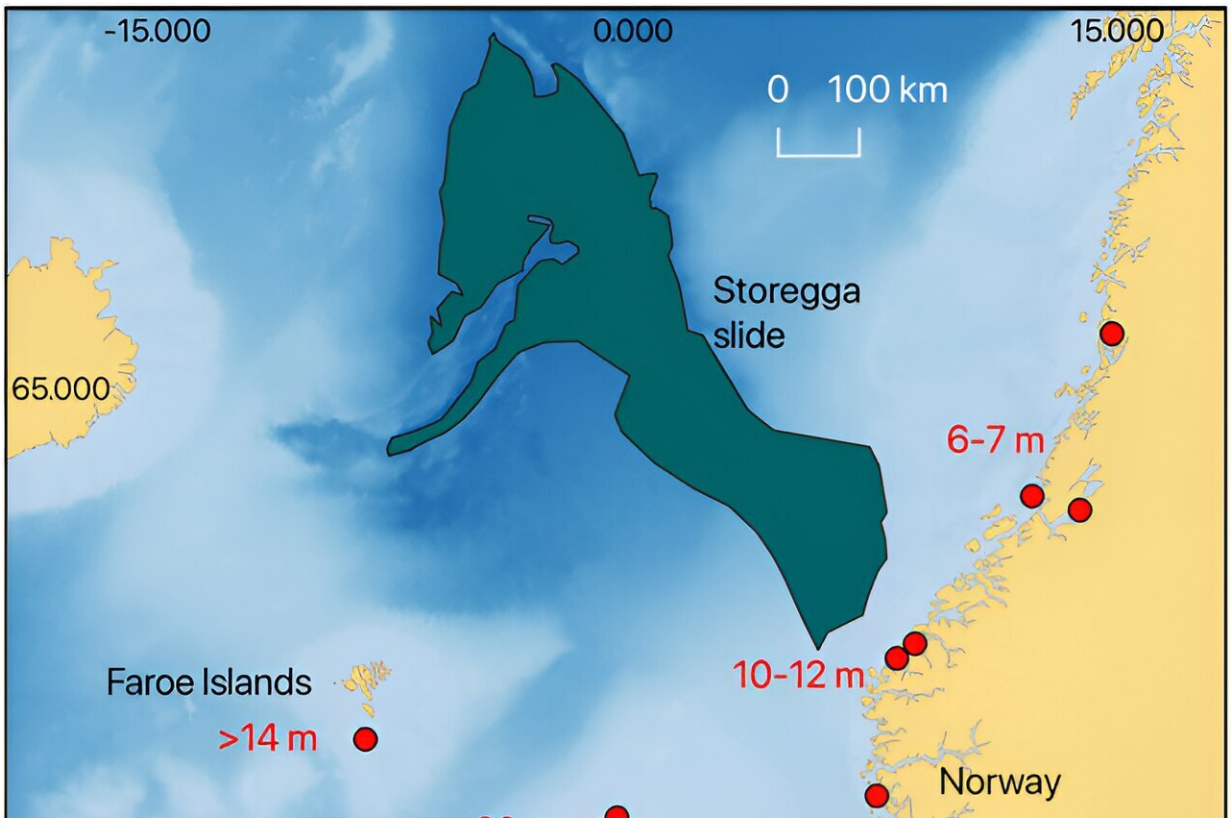

The locations of the Storegga slide and Storegga tsunami sediment deposits (red circles) with the run-up heights at each location indicated (produced in QGIS; based on Bateman et al, 2021). Credit: *Journal of Quaternary Science* (2023). DOI: 10.1002/jqs.3586

An enormous tsunami with gigantic waves reaching 20 meters submerged large parts of northern Europe and may have wiped out populations of people in Stone Age Britain, a new University of York study has discovered.

The research focuses on a tsunami that hit Britain and northern Europe about 8,000 years ago. The authors think the waves were so huge and the number of deaths were so high that it may have led to a massive dip in Stone Age Britain's population.

Coastal communities

Researchers believe the tsunami, which hit the eastern coast of the U.K. particularly hard, was caused by an underwater landslide known as the Storegga slide near Norway and coincides with a time when there was a large population decline in northern Britain.

Dr. Jon Hill, an environmental scientist at the University of York who led the research, said although northern Britain had a small population of about 1,000 people at this time, the consequences of the Storegga tsunami were severe.

"A giant tsunami of this size would have devastated Stone Age coastal communities as it occurred in the autumn, when they would have been gathering resources for the winter. The scale of the waves coming in would have been completely different to anything experienced by the people living there—a truly terrifying experience," he said.

Population plummeted

Previous archaeological studies suggested that the number of sites inhabited across northwest Europe suddenly plummeted around this

time, linked to a rapid and sustained drop in temperatures across the continent.

But the research, published in the *Journal of Quaternary Science*, blames the tsunami for this massive population decline.

Dr. Hill added, "Some past fishing societies in tsunami-prone regions such as the northern Pacific have shown some resilience to tsunamis and knew about moving to higher ground. But the tsunami event in northern Britain was more of a freak event, with Stone Age people here having no living memory or ancestral knowledge about how to make themselves safe."

The massive landslide off the coast of western Norway displaced 2,400–3,200 cubic km of sediment, and may have triggered waves reaching heights of between three and six meters in northern England, according to the study. This created monster waves of more than 20 meters in places, battering Northumberland, the Shetland Islands and much of northern Britain.

Computer simulations

As part of the study computer simulations of the tsunami were used to determine whether the massive waves may have contributed to the population decline or if other factors played more significant roles.

Based on the simulation, researchers suspect there could have been significant mortality due to the tsunami as well as indirect impacts caused by damage to key resources that the ancient people needed to survive.

Dr. Hill said, "Alongside the direct mortality from the waves, this tsunami created longer-term impacts on resources for Stone Age people.

It would have decimated food supplies so there's a strong possibility this contributed to the sharp population decline we saw in northern Britain at this time, although this period also saw a rapid sea-level rise and a sharp drop in global temperatures."

More information: Patrick D Sharrocks et al, Evaluating the impact of the Storegga tsunami on Mesolithic communities in Northumberland, *Journal of Quaternary Science* (2023). DOI: 10.1002/jqs.3586

Provided by University of York