



## **A new date for a large pre-Holocene Storegga Slide**

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Submarine landslides represent one of the most hazardous geological events to impact North European margins. Whilst infrequent, ancient events have generated large tsunamis, a repeat of which today would cause significant damage. A sediment piston core suite collected in 2014 from the Aegir Ridge contains a record of two turbidites sourced from very large-volume slides (over 3,000 km<sup>3</sup>). The youngest turbidite is dated to 8.2 ka BP and geochemically confirmed as sourced from the Storegga Slide Complex. The Storegga Tsunami has been recorded across the North Atlantic and was 5m high in Scotland, and waves in excess of 20 m in the Faroes. The younger 8.2 ka turbidite is interpreted as a distal deposit from the Holocene Storegga Slide. The lower turbidite is substantially larger in thickness, yet geochemically similar, indicating a common source with the Storegga turbidite. Through a multi-proxy approach to dating, including radiocarbon analysis, paleomagnetic stratigraphy and coccolith biostratigraphy, the date of emplacement has been constrained to 50-65 ka BP. This lower event is interpreted as a pre-Holocene failure from the Storegga Slide Complex, the most recent of which has been previously identified as the Tampen Slide, initially dated to 130 ka BP. The new date applied to this slide challenges the existing theory that mega-slides from the Storegga Slide Complex require a full glacial cycle to build up enough sediment for a tsunamigenic landslide. The slide occurred during late MIS 3, characterised by periods of rapid warming of up to 15 [U+25E6] within 200 years. The exact timing will be further refined to assess the relationship between catastrophic slides and periods of rapid climate change. The implications of this event are significant. The deposit from this event is between 2.5 to 4 times larger, implying the potential for significantly larger waves, at a higher frequency than previously thought.