

## Holocene History of Bering Glacier

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Marine shells and *in situ* forests are currently emerging during the post-surge retreat of Bering Glacier. These give evidence of non-glacial environments in the Bering Glacier Foreland during early to mid-Holocene times. Englacially transported marine shells collected behind the recent surge margin give evidence of a fully marine environment ~8-10,000 years ago in locations currently buried by the Bering Glacier. The widespread occurrence of these shells suggests that the marine embayment extended across the entire Bering Glacier Foreland.

Fully marine conditions occurred in at least one location near the current ice margin until ~5,000 years ago as evidenced by *in situ* burrowing clams located on the Tagglund Peninsula. Evidence for terrestrial conditions by ~4,000 years ago is found along the western ice margin based on the transported wood collected there.

Clear indications of widespread forests are found along both the eastern and western margins of the current Bering Glacier where *in situ* peat deposits and forest beds indicate both non-glacial and non-marine environments existed for ~1,000 years between 200 BC and 800 AD (and possibly as late as 1200 AD along the eastern margin). Forests are both growing on and buried by sandy lacustrine sediments, suggesting fluctuating lake levels.

Subsequently, sedimentation changes from lacustrine beds to outwash gravel indicating glacial growth and advance in the area. Along the west side of Tashalich Arm, no peat or forest beds interrupt the thick outwash sequence suggesting a fairly barren outwash environment adjacent to the ice. Although several tills are interspersed with the outwash along the eastern ice margin, no tills occur until the top of the outwash sequence along the western side of the glacier. These tills were deposited by ice advances before and during the Little Ice Age and by subsequent surge events. Wiles et al. (1991) suggest that Bering Glacier began its Little Ice Age advance during the 18<sup>th</sup> century AD.