

## Probable Cause and Process of Rapid Relative Sea Level Changes in Southwestern Iceland in Late Glacial time

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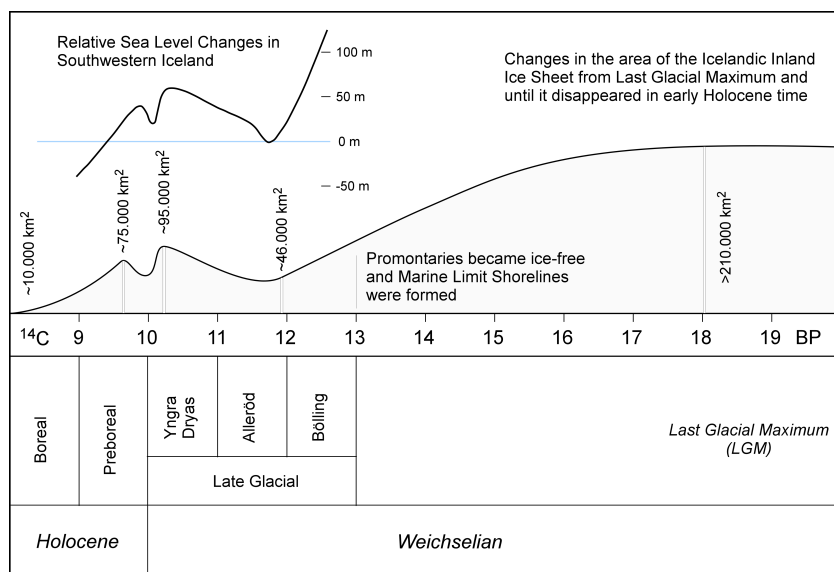
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This paper describes likely process leading to formation of very high raised shorelines in Southwestern Iceland when the Inland Ice Sheet retreated from the shelf around Iceland and onto present day dry land in Late Weichselian time. Later the glaciers advanced and reached positions close to the present coasts of Iceland. Concurrently with these changes in the glacier extent relative sea level regressed and transgressed during times of general global sea level rise.

The early Bölling deglaciation was extremely rapid with a collapse of the sea based part of the inland ice and formation of very high raised shorelines. The relatively low viscosity of the asthenosphere underneath Iceland and great mobility of the crust explain that the land mediately responded to changes in the glacier load with very rapid isostatic recovery and subsequent lowering of relative sea level.

Due to deterioration of the climate the glaciers advanced and, thus, an increased load on the crust induced a transgression of relative sea level in late Alleröd and early Younger Dryas time when Iceland was more or less covered by a continuous inland ice sheet. After to some retreat in late Younger Dryas and early Preboreal time, the glaciers readvanced.

Subsequent to this readvance the inland ice rapidly retreated and relative sea level regressed below the height of present sea level at about 9.400 <sup>14</sup>C years BP and reached its lowest position at about 9.000 <sup>14</sup>C years BP.



*A summary of the extent of the Icelandic inland ice sheet and relative sea level changes in Late Weichselian and Late Glacial time in Southwestern Iceland*