



Early deglaciation (18.1 ka BP) of the southwest Scandinavian Ice Sheet and Late Glacial sea-level change reconstructed from isolation basins on Karmøy

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A series of cosmogenic exposure dates (^{10}Be) suggest that the island Utsira off the SW coast of Norway became ice free as early as 20 ka years ago. Here we present a preliminary sea level curve that has been constructed for the island of Karmøy, which is situated at the mouth of Boknafjorden just a few km inside Utsira, based on coring and analyses of sediment sequences from isolation basins. A deglaciation age of 18.1 ± 0.1 ka BP has been established for southern Karmøy based on radiocarbon dating of foraminifera from basal marine sediments in two basins; lake Grødheimsvatnet (15.5 m above present sea level) and the bog Kringlemyr (12.0 m above present sea level). Lithostratigraphic and microfossil analyses show that Grødheimsvatnet became isolated from the sea at 17.8 ± 0.1 ka BP, while Kringlemyr emerged at 17.0 ± 0.2 ka BP. The results from these basins give a mean rate of emergence of about 4.4 mm/yr during the first millennium after the area became ice-free. Relative sea level on Karmøy then fell more rapidly at the transition to the Bølling interstadial before levelling out some 3-4 m below present day sea level around 14 ka BP. Following this period of stillstand the sea level started to rise during the Allerød culminating at 6-7 m above present towards the end of Younger Dryas, after which another, more rapid regression phase started. We have combined the curve from Karmøy with far-field sea-level data in order to quantify the contributing factors (i.e. glacial isostatic adjustment and geoid changes) in the reconstructed shoreline displacement.