# DIATOM ASSEMBLAGES IN A QUATERNARY SEDIMENT SEQUENCE FROM THE KIHNU ISLAND, ESTONIA, GULF OF LIVONIA, EASTERN BALTIC SEA

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The importance of this investigation is related to a wide international interest in the history of shallow epicontinental and shelf seas, including the Baltic Sea, which play an extremely important role in the global climate system. Their often high resolution Quaternary sediment records represent an important archive for studies of environmental changes.

Kihnu is a small island in the Gulf of Livonia, in the eastern Baltic Sea, close to the western coast of mainland Estonia. The land area of Kihnu Island is 16.9 $km^2$, its length 7 km and width 3.3 km. The shoreline of Kihnu is 36.2 km long and the sea surrounding Kihnu is shallow and full of reefs and rocks. Kihnu is a fairly low-lying and level island, with a maximum height reaching up to 8.5 m above sea level.

A 41.5 m thick Quaternary sediment sequence from the upper part of a 410 m long core from the Kihnu Island, Estonia, Gulf of Livonia, eastern Baltic Sea, was studied with respect to siliceous microfossils, mainly diatoms. The middle part of the Quaternary sequence consists of a 10 m thick stratum of compressed silty clay, which is rich in diatoms, while the over- and underlying Quaternary strata are almost barren.

The diatom assemblages indicate two major types of depositional environment. In the lower part of the silty clay stratum, the diatom spectra have a dominance of marine-brackish species, suggesting marine littoral conditions, known to be characteristic for the littoral of the Eemian Baltic Sea proper. In the upper part of the stratum, almost all the marine species are replaced by freshwater taxa, indicating a slightly brackish to freshwater environment at the deposition.

The diatom spectra show a change from a marine to a freshwater environment during the Eemian Interglacial. The succession of diatom taxa indicates that the water in the Eemian Baltic Sea basin changed from saline to fresh, implying that the basin became isolated from the sea.

The two diatom stratigraphical units seem to represent one transgressive and a regressive phase, corresponding to the climate optimum and to the later part, the termination, of the Eemian Interglacial.