



Holocene sea-level changes in King George Island, West Antarctica, by virtue of geomorphological coastal evidences and diatom assemblages of sediment sections.

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A new curve of relative sea-level change is presented for the Fildes peninsula, King George Island, West Antarctic. This work is based on renewed paleogeography data, including coastal geomorphological evidence, diatom assemblages of lakes bottom sediments and radiocarbon datings of organics.

The new data were obtained in several sections of quaternary sediments and groups of terraces, and allows us to expand and improve relevant conception about relative sea level changes in the King George Island region. The new radiocarbon datings of organics (mosses and shells) allows reconstructing Holocene conditions that maintain and cause the sea-level changes. Sea diatom assemblages of Dlinnoye lake bottom sediment core (that complies period about 8000 years B.P.) mark altitude of marine water penetrated into the lake. The altitudes of shell remains, which have certain life habits and expect specific salinity and depth conditions, coupled with their absolute datings, indicate the probable elevation of the past sea level.

The Mid-Holocene marine transgression reached its maximum level of 18-20 m by 5760 years B.P. The transgression influenced the deglaciation of the Fildes peninsula and environment conditions integrally. The ratio of glacio-isostatic adjustment velocity and Holocene transgression leded to the decrease of relative sea level during the Late Holocene excluding the short period of rising between 2000 and 1300 years B.P. Comparing this data with the curve for Bungee oasis, East Antarctica, introduced earlier gives an interesting result. Despite the maximum altitudes of relative sea-level rise in King George region were higher and occurred later than in Bungee oasis region, the short-term period of Late Holocene sea-level rising contemporizes. Besides that, this work allow to realize a correlation between regions of Antarctica and adjacent territory. That, in turn, lets answer the question of tectonic and eustatic factors ratio and their contribution to the Holocene transgression in different regions.