

GLOBAL SEA LEVEL RISE AND CHANGING EROSION

*Jan Harff – Baltic Sea Research Institute, Germany and
Birgit Hünicke – Helmholtz-Zentrum Geesthacht, Germany*

Changes in earth's climate during the late Pleistocene led to melting continental ice shields marking the end of the last glaciation. Due to the redistribution of water from the continents to the oceans and thermal expansion of sea water the eustatic sea level began to rise continuously. Along the continental margins the rising sea level interferes with the vertical displacement of the earth's crust: the indirectly climatically forced glacioisostatic adjustment. Where the land is subsiding or the rate of eustatic sea level rise exceeds the crustal uplift, the continental shelf and its paleolandscapes are continuously inundated. Here, the migrating highly dynamic shoreline reworks the surface of the paleolandscape. For times of relative rapid sea level rise – as during the late Pleistocene and early Holocene paleolandscapes are rather drawn preserving their former shape than in periods of slow sea level rise (late Holocene) when locally more stable hydrographic forcing reworks intensely the substrate of the coastal zone destroying also eventually archaeological sites. Integrated modelling approaches of climate and glacioisostasy can proof favourable conditions for the preservation of paleolandscapes. These approaches may provide valuable prerequisites for planning and executing of archaeological surveys on the continental shelf.