



A Holocene Sea-Level Database for the Baltic Sea

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A new database of sea-level indicators covering the Baltic Sea and Kattegat was compiled. Primarily, the 1,100 sea-level indicators are aimed to reconstruct the sea-level history of the Baltic Sea during the last 18,000 years by tracing its alternating lake and sea stages. Due to the regional heterogeneity of existing compilations, we decided to base this new compilation on the expertise of a couple of scientists who provided their descriptions of the respective data sets. In this way every single indicator has been re-evaluated by experts regarding its position, dating, calibration, applied corrections and reliability. The spatial distribution covers the Baltic Sea and near-coastal areas fairly well, but some larger gaps mainly remain in Sweden. The temporal resolution peaks between 8,000 and 6,000 calibrated years before present (cal. a BP) when about a third of all indicators were deposited. Indicators older than 12,000 cal. a BP are rare and make up less than 5 per cent of the compilation. The majority of data obey the recently developed HOLSEA format and thus are ready for further application in, e.g., glacial isostatic adjustment (GIA) modeling. As the information content of the provided data sets differ, we use an SQL database system to store the data sets in their individual form and to map the different input into the HOLSEA format. This strategy was chosen in order to keep the primarily information complete as any permanent transformation into a different format implies loss of data.

We perform a comparison of the data to sea-level curves calculated with commonly used GIA models based on the ICE-5G and the ICE-6G_C ice histories. While we find an expected excellent agreement to data used in the generation of these ice models, we identify partly large differences to recently derived data that were not used yet. These preliminary results motivate improvements of these ice history models and already show the benefit of the new compilation for future studies.