

Short Introductions to the Presentations

“The Geological Development of the Eastern Palaeo Great Belt Channel from approx. 11.0 cal ka. BP to 8.0 cal ka. BP”

Carina Bendixen, Dept. of Marine Geology and Glaciology, Geological Survey of Denmark and Greenland (PhD student)

The DAN-IODP-SEIS project is funded by GeoCenter Danmark. One of the goals is to gain detailed spatial knowledge of the deeper Danish Quaternary basins through the last interglacial – glacial cycle (late Saalian to present). The first paper is concerning the geological settings of the southern Kattegat from 11.0-8.0 cal. Ka. BP with emphasis on the connection to the drainage of the Ancylus Lake. For further information please contact cb@geus.dk.

“Marine Resources on the Seabed in Denmark – Geological Mapping, Management, Extraction and Use of Sand, Gravel and Stones”

Danni Junge Jensen, Dept. of Marine Geology and Glaciology, Geological Survey of Denmark and Greenland (Research Assistant)

Marine mineral aggregates are an important prerequisite for the development of the infrastructure in Denmark as well as for securing economic growth conditions. The basic knowledge of marine raw material composition, proportions, spatial distribution and availability in Danish waters is scattered. Linking of complex data sets is required to provide a better quantitative and qualitative assessment of the extent of mineral resources at sea. For further information please contact djj@geus.dk.

“Coastal Lagoon Systems and Sedimentary Constraints on Holocene Relative Sea-level: Samsø, Southern Kattegat Sea”

Lasse Sander, Dept. of Geosciences and Natural Resource Management, University of Copenhagen (PhD student)

Coastal lagoons and associated barriers are typical elements of the coastal landscape in Denmark. As part of the BRIDGES project, we explore the sediments deposited in these small, marine basins in order to retrieve an indication of past sea-levels of the Holocene period. The island of Samsø was chosen as a focus area of this PhD project. Our results reveal a sudden jump in sea-level about 7.600 years ago, followed by a period of relative stability. We were further able to reconstruct morphological changes of the coastal landscape since then. For further information please contact las@ign.ku.dk.

“Reconstruction of Coastal Environment in the Swedish East Coast over the Last 6000 Years with Multiple Proxies”

Wenxin Ning, Dept. of Geology, Quaternary Sciences, Lund University (PhD student)

Here is a study on the Swedish east coast covering the last 7000 years. Sea level changes have led to significant variations in salinity, openness of the fiord and changes in biology. For further information please contact Wenxin.Ning@geol.lu.se.

“Coastal Evolution in Sedimentary Areas in Greenland”

Mette Bendixen, Dept. of Geosciences and Natural Resource Management, University of Copenhagen (PhD student)

This presentation focused on the coastal changes along the shores of two specific areas in Greenland: the Disko Island area in the low Arctic zone with discontinuous permafrost and the Young Sound area in the high Arctic zone with continuous permafrost. Long-term changes over decades were studied using aerial photographs and satellite images. Most of the changes occurred around small deltas where changes in channel lobes directly influenced the spatial variability in erosion and accretion rates. First results indicated that the erodibility was limited in the area of continuous permafrost. For further information please contact mette.bendixen@ign.ku.dk.

“Near-field Sediment Plumes from Hopper Overflow”

Sina Saremi, Dept. of Mechanical Engineering, Technical University of Denmark (PhD student)

The spillage of the highly concentrated sediment mixtures during dredging operations can result in creation of turbidity plumes with negative impacts on the marine environment. The spatial and temporal extent of the overflow plumes is affected by the nearfield processes. A 3D two-phase mixture method has been used to model the detailed processes involved in nearfield entrainment, dilution and settling of the turbidity plumes. The numerical model is a perfect tool for conducting a parametrized study on the nearfield behaviour of the plume, which then provides boundary conditions for the larger scale farfield dispersion models. For further information please contact remi@mek.dtu.dk.

“Modelling the Impact of Seagrass on the Sedimentary Conditions at Rødsand Lagoon, SE Denmark: Implications for the Construction of the Fehmarn Belt Connection”

Pernille Forsberg, DHI and Dept. of Geosciences and Natural Resource Management, University of Copenhagen (MSc student)

This presentation outlines a preliminary study of the consequences a fine-grained sediment spill from the construction of the Fehmarn Belt connection could have for the Rødsand lagoon, SE Denmark. The importance of eelgrass for the suspended sediment levels in the lagoon is investigated through numerical modelling, as well as the effects of an increased sediment input. Ideas for further studies are provided. For further information please contact forsberg.ernille@gmail.com.