Geodiversity of a large meander bend in the Little Belt strait in the inner Danish waters
Ernstsen, Verner Brandbyge; Hansen, Lars Øbro; Becker, Marius; Brivio, Lara; Vang, Torben; Trinhammer, Per L.; Andresen, Katrine Juul; Seidenkrantz, Marit-Solveig; Boldreel, Lars Ole; Bartholdy, Jesper

Published in:
Geophysical Research Abstracts

Publication date:
2017

Document version
Publisher's PDF, also known as Version of record

Citation for published version (APA):
Geodiversity of a large meander bend in the Little Belt strait in the inner Danish waters

Verner Brandbyge Ernstsen (1), Lars Øbro Hansen (1), Marius Becker (2), Lara Brivio (3), Torben Vang (4), Per Lynnerup Trinhammer (5), Katrine Juul Andresen (5), Marit-Solveig Seidenkrantz (5), Lars Ole Boldreel (1), and Jesper Bartholdy (1)
(1) University of Copenhagen, Department of Geosciences and Natural Resource Management, Copenhagen K, Denmark (vbe@ign.ku.dk), (2) MARUM – Center for Marine Environmental Sciences, Bremen, Germany, (3) Department of Geosciences, University of Padova, Italy, (4) Department of Bioscience, Aarhus University, Denmark, (5) Department of Geoscience, Aarhus University, Denmark

The Little Belt strait in the inner Danish waters is characterised by a high biodiversity, and continuous monitoring of flora and fauna and the water quality is undertaken by the authorities. However, the surface sedimentology and geomorphology, i.e. elements of the geodiversity, are less well-constrained. The aim of this study is to investigate the surface sediment and morphology of a large meander bend (with a channel width of ~1 km) located between the two bridges crossing the strait (a channel reach of ~4 km) in order to assess a potential coupling between geodiversity and biodiversity. More specifically, the objectives are 1) to identify and classify morphological units for creating a geomorphological map, 2) to quantify surface material characteristics for creating a surface material map, and 3) to develop a conceptual model of the substrate and the morphology and morphodynamics in the meander bend between the two bridges in the strait.

Preliminary results reveal a diverse morphology in the meander bend; and the annual morphological changes reveal complex sediment transport patterns along and across the bend. Likewise significant sediment sorting trends exist along and across the meander bend. Hence, the preliminary results indicate a high geodiversity in the strait.

Acknowledgements
The data were collected as part of the MSc course Marine Geoscience, a joint MSc course between the Department of Geosciences and Natural Resource Management at the University of Copenhagen and the Department of Geoscience at Aarhus University. Additional data were included from the research project Control in the Danish Straits 1 (CiDS-1) funded by the Danish Centre for Marine Research (PI Morten Holtegaard). Thanks to the crew on board RV Aurora.