

"Effects and indicators of climate change in Danish coastal waters"

Jens Würgler Hansen¹⁾, Mads Nedergaard¹, Mikael Hjort Jensen²⁾, Per Andersen³⁾, Jørgen Hansen⁴⁾

¹⁾ Danish Ministry of the Environment, Environment Centre Ringkøbing, Holstebrovej 31, 6950 Ringkøbing, Denmark

²⁾ Danish Ministry of the Environment, Environment Centre Odense, Ørbækvej 100, 5220 Odense SØ, Denmark

³⁾ Orbicon, Jens Juuls Vej 16, 8260 Viby J, Denmark

⁴⁾ University of Aarhus, National Environmental Research Institute, Department of Marine Ecology, Frederiksborgvej 399, 4000 Roskilde, Denmark

Effects and indicators of climate change in the Danish nature were studied in the project IGLOO. Results from this project will be presented with focus on marine systems. The research for effects and indicators was based on analysis of monitoring data (national and regional) consisting of unique long time series of various parameters within terrestrial systems, streams, lakes, and marine waters. For the coastal marine eco-systems the analysis demonstrated significant increases in temperature and stability of the water column, decreasing oxygen concentrations in bottom water, and changes in the timing of the spring bloom of phytoplankton. Further, indications were found that climate changes stimulate changes in species composition and introduction of new species of plankton. The impact of climate change on coastal systems will be related to some of the impacts found in streams and lakes. Finally, management recommendations to optimise monitoring of the impact of climate change in coastal systems will be presented.