



The effect of the changing climate on the sea ice extend in the Nares Strait

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A simulation of the regional climate at Greenland has been made with HIRHAM (The Danish Meteorological Institute's atmospheric climate model) from 1950 and until 2080. The result from this simulation has been used to force a regional coupled ocean and sea ice model (HYCOM+CICE) at the surface. The region considered is the Nares Strait, Lincoln Sea and the Baffin Bay. The lateral boundaries of HYCOM and CICE have been relaxed towards a global ocean and sea ice model. The ice cover in this region is very seasonal dependent and it varies from fully ice covered to a partial coverage in the northern part of the domain. The extend of the ice cover is important to the marine ecosystems in the area where polynias are known to produce high biological production and thus a change of sea ice cover will greatly influence the conditions for life.

The purpose of this study is to investigate the influence of the expected climate change in the region on the hydrography and the sea ice distribution and extend. It is expected that the ice cover will decrease especially during summer. This simulation will give an estimate of the change in sea ice extend.