



## Regional ocean acidification in the Nordic Seas

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Models of ocean acidification are required at scales relevant to the prediction of regional biogeochemical, planktonic and fisheries responses. Significant advances have been made in modelling the meridional ocean pH response (Caldeira and Wicket, 2003; Orr et al., 2005) and spatial scales of aragonite saturation (Orr et al, 2005). Here we introduce regional modelling of centennial ocean pH decrease for the North Atlantic and Nordic Seas from the Bergen Climate Model utilising regional empirical relationships between the CO<sub>2</sub> system and hydrography (Olsen et al., 2003; Bellerby et al., 2005). Further, the model has been refined to include recent advances in our understanding of the North Atlantic CO<sub>2</sub> response to anthropogenic forcing (Olsen et al., submitted; Omar and Olsen, accepted 2006). The model predicts future timing of aragonite and calcite undersaturation for regions of the sub-Polar Arctic and we will discuss this in relationship to marine ecological systems using case studies of (1) planktonic systems (coccolithophorids and pteropods) in the Norwegian Seas and (2) the largest cold water reef system – the Røst Reef on the Norwegian Shelf.

### References

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