

Interactive effects of increased CO₂ levels and iron availability on the marine pelagic food web during a mesocosm experiment

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A mesocosm experiment was carried out in the Raunefjord, off Bergen, Norway (June 2012) to investigate the interactive effects of increased CO₂ and iron availability on the pelagic food web. Twelve mesocosms (11m³) covered by PAR and UVR transparent lids were used. The seawater carbonate system in the mesocosms was manipulated to achieve two different CO₂ levels, corresponding to the present (390 ppmV, LC) and to levels predicted for year 2100 (900 ppmV, HC). Mesocosms were fertilised at the onset of the experiment, by addition of 10 μM nitrate and 0.3 μM phosphate to induce a bloom of the coccolithophore *Emiliana huxleyi*. On day 7 of the experiment, half of the mesocosms were amended with 70 nM (final concentration) of the siderophore desferoxamine B (DFB). The relevance of these results within a global biogeochemical perspective will be discussed.