

bloom. "The different responses we observed made it clear that the communities' sensitivity to acidification depends strongly on whether or not nutrients are available."

With 35 participants from 13 European institutions, the mesocosm experiment was the largest project of the European Project on Ocean Acidification EPOCA which ran from 2008 to 2012. It was made possible with the support of the French-German Arctic Research Base (AWIPEV) at Ny-Ålesund. "EPOCA decided to go to the Arctic because the ocean in this region absorbs more carbon dioxide, due to the low water temperatures. Acidification is faster there than in temperate or tropical regions", says Jean-Pierre Gattuso. The Centre National de la Recherche Scientifique (CNRS-INSU) scientist from the Laboratory of Oceanography of Villefranche-sur-mer, France coordinated EPOCA. "In addition, it was the aim of the project to investigate the response of organisms within their natural communities and to verify the results from laboratory studies."

Trends from this first study with the Kiel KOSMOS mesocosms were complemented by subsequent experiments in Norway (2011), Finland (2012) and Sweden (2013): "Time and again the tiniest plankton benefits from the surplus of CO₂, they produce more biomass and more organic carbon, and DMS production and carbon export are decreasing", Riebesell summarizes. "This year, our long-term experiment off the west coast of Sweden gave us a chance to see for the first time what this development means for the higher trophic levels, and whether the system can adapt to higher acidity. We await the results with great anticipation."

Original publication:

Riebesell, Ulf; Gattuso, Jean-Pierre; Thingstad, T. Frede; Middelburg, Jack J. (Eds.): Arctic ocean acidification: pelagic ecosystem and biogeochemical responses during a mesocosm study. Special Issue Volume 10/2013. www.biogeosciences.net/special_issue120.html

Links:

EPOCA www.epoca-project.eu

Basic information about ocean acidification: www.bioacid.de/front_content.php?idcat=576&idlang=22