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SEA TEMPERATURE RISE, CHANGE IN EUTROPHICATION, AND PHYTOPLANKTON COMPOSITION (1987-2013) IN THE SYLT-RøMø BIGHT, NORTH SEA; GERMANY

Rick, Johannes, Elbrächter, Malte, Manly, Bryan, Wiltshire, Karen

Sea surface temperature in the Sylt Rømø Bight (SRB) showed an exceptional high annual rise of 0,03°C over the last half century which was accompanied with a reduction in eutrophication starting in the mid-nineties. Since 1987 microplankton composition (> 700 species) in the SRB was monitored on a weekly basis (ca. 1300 samples) within the semi-quantitative SYLT ROADS time series. The plankton data set is accompanied by a full set of hydrochemical parameters. Based on this information the paper aims at the description of the overall behavior of the planktonic community during this time of environmental change. Over the last thirty years 55% of the regularly abundant micro plankton species show a decrease in frequency of their yearly occurrence while the remaining 45 % show an increase. These percentages are virtually identical for diatoms and dinoflagellates. Frequently occurring species mostly changed modestly in occurrence while less frequent or even rare species often changed strongly in the course of the three decades. This illustrates a planktonic community changing significantly with regard to the occurrence of less frequent species but which is simultaneously stabilized by a more constant behavior of abundant and dominant groups.

Keywords: phytoplankton composition, time series, North Sea

Contact author: Dr. Johannes Rick, Alfred-Wegener Institut – Helmholtz-Zentrum für Polar- und Meeresforschung, Wattenmeerstation List/Sylt, johannes.rick@awi.de