

The Department of Biological Oceanography focuses on the role of planktonic key species in the carbon and energy fluxes and nutrient recycling. Specific emphasis is put on the complex interaction between bottom-up and top-down control mechanisms in the lower planktonic food web.

In the year 2003, three cruises were executed. During the MOMAP-2 cruise in the North Sea, growth and mortality of phytoplankton during summer conditions was studied. An important component of this cruise was the assessment of the phyto- and bacterioplankton viral-induced mortality. At the TRANSAT-2 cruise performed in collaboration with FYS, the diagenesis of dissolved organic matter and the accompanying changes in prokaryotic community composition was followed in the North Atlantic Deep Water. This was done along a transect from Bermuda to the Greenland-Island-Norwegian Sea, covering roughly the first 50 years of the North Atlantic Deep Water in the oceanic conveyor belt. During the BADE-1 cruise, an anticyclonic eddy was followed in the western Mediterranean Sea over a period of three weeks and the dynamics of the microbial community in the surface layers including the air-sea interface was studied. Particular attention was paid to the role of ultraviolet radiation influencing the carbon and energy flow between the different compartments of the microbial community. In October, BIO participated in a Dutch/Indonesian interdisciplinary expedition along the east coast of Kalimantan, Indonesia together with MEE and MCG. In this project, we measured gradients in pico- and nanoplankton, inorganic nutrients and TOC in the benthic boundary layer (including coral cavities) over lagoonal reefs in the Berau river plume, over the barrier reef towards the oceanic reefs in the Sulawesi Sea. For the EU-funded AIRWIN project, a major field campaign was performed in the Mediterranean Sea, and for the BASICS project, the seasonal dynamics of the microbial community were monitored in the coastal North Sea, in combination with the long-term monitoring program coordinated by MEE.

Two EU-funded projects, BIOHAB and COMET, coordinated by BIO, were completed. Reports on these 2 projects are included in the BIO and the MCG report. Christian Winter and Sander Scheffers completed their Ph.D. thesis work. Summaries of their work were included in the BIO contribution of this report. Corina Brussaard has been recruited within the Excellent-Post Doc program to work on the ecology of viroplankton.

Divers conducting pelagic-benthic coupling studies on the coral reef slope at the W-side of Maratua (East Kalimantan, Indonesia)

