

**Zooplankton studies during the expedition of RV Polarstern
to the western Weddell Sea (November 9th 2004 to January 19th 2005)**

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The aim of this zooplankton study was to characterize the zooplankton community in the western Weddell Sea during the transition from the spring to the summer state. Our research focussed on the following issues: abundance, biomass, species composition, horizontal and vertical distribution, population structure, maturity of gonads, gut content, CN, lipids, stable isotopes as well as experimental studies on feeding, excretion and respiration.

The major gear employed for the distributional studies of mesozooplankton was the midi multiple opening and closing net (0.25 m² mouth opening) equipped with five nets of 100 µm each. The MultiNet was towed vertically, sampling the standard layers between 1000m and the surface. The samples were preserved in 4% buffered formalin.

For molecular genetic purposes, a maxi MultiNet (0.5 m² mouth opening) equipped with nine nets of 100 µm each was employed. Stratified vertical hauls covered the entire water column. The samples were preserved in absolute ethanol and stored at 0°C.

For the study of stable isotopes, lipid content and CN analyses, the midi MultiNet was equipped with five nets of 55 µm each, and was towed between 200 - 500m and the surface. Different zooplankton species (e.g., foraminifers, copepods) were sorted out immediately after sampling and were deep frozen at -80°C. All multinet samples will be analysed in the laboratories.

The experimental work on feeding, excretion and respiration was carried out with dominant pelagic copepod species (*Calanoides acutus*, *Calanus propinquus*, *Metridia gerlachei*) and with sea-ice taxa (turbellarians, ctenophores, the copepods *Stephos longipes* and *Drescheriella glacialis*). The data evaluation is under process.

After returning from ISPOL, Dr. Schiel she gave a lecture on CMarZ ("Census of Marine Zooplankton: an international campaign for the exploration of the diversity of species in the world oceans") on February 28th, 2005 at the Übersee Museum in Bremen, Germany.