

The Expedition ANT-XXVII/3

Weekly Reports

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Summary and Itinerary

8 February - 18 April 2011

Punta Arenas - Cape Town

The expedition ANT-XXVII/3 aims to investigate the potential effects of climate change on biodiversity and ecosystem functioning in sub- and high-Antarctic regions. The expedition is part of the international SCAR programme "Biodiversity and Evolution in the Antarctic: The response of life to change" (EBA). Based on data and results obtained during former expeditions in the framework of EASIZ and EVOLANTA, this expedition focuses on three main topics:

- Zoogeography und biodiversity in the Sub and High Antarctic and the genetic and physiological processes regulating species diversity and distribution.
- Pelago-benthic-coupling processes and impact of climate induced changes on the food web.
- Impact of changing shelf ice dynamics on the biodiversity of the benthic and demersal fish communities on the shelf.

The studies will concentrate on shelf and slope communities down to about 600 m water depth. Investigation areas include the sub-Antarctic islands in the Scotia Sea and Bouvet Island, as well as high-Antarctic shelf areas in the western and eastern Weddell Sea. In all areas studies on biogeography, genetics, ecology and physiology of zooplankton, benthos and fishes will be carried out. For specific long-term experiments live animals (in particular fishes) will be transported to the AWI laboratories in Bremerhaven.

The 3rd leg of "Polarstern" expedition ANT-XXVII will start on the 8th of February 2011 from Punta Arenas, Chile. The first working station will be located on the shelves of South Georgia and the South Orkney Islands; subsequently "Polarstern" will head southwestwards for the Antarctic Peninsula. Beside some station work in the Bransfield Strait the German Dallmann Laboratory on King George Island will be supplied. After this, the next destination of "Polarstern" will be the main study sites in the Weddell Sea: LARSEN-AB off the eastern Antarctic Peninsula and BENDEX on the northeastern Weddell Sea shelf. After supply of NEUMAYER III the vessel will head for the last study area around Bouvet Island. Finally, "Polarstern" will move towards Cape Town, South Africa, where the expedition ends on the 18th of April 2011.