Departure to cold water corals and other 'hot spots'

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The research vessel, Polarstern leaves Bremerhaven for its 22nd Arctic expedition with a new shine, to begin its first work in the International polar year.

Bremerhaven, 24 May 2007. With a new coat of paint, thorough ship inspection, and sailing under the flag of the Helmholtz Association, Polarstern begins to make its way toward the north on May 29. The flagship of the Alfred Wegener Institute for Polar and Marine Research (AWI), is initially heading to Northern Norway and then on to Spitsbergen during its 22nd Arctic expedition.

One of the scientific priorities is the European project HERMES (Hotspot Ecosystem Research on the Margins Of European Seas), in which the ecological ecosystems of the deep sea will be investigated. The manned underwater craft, JAGO, belonging to the Leibniz Institute of Marine Sciences, IFM GEOMAR from Kiel and the remote-controlled underwater craft QUEST from the MARUM of the University of Bremen are all planning to be used.

130 scientists from 11 countries, divided into three groups will participate in the expedition.
Professor Dr. Jörn Thiede, director of the Alfred Wegener Institute for Polar and Marine Research will take the scientific leadership of the first stage. The focus of this research will be the coldwater corals off the coast of Norway. Coldwater corals develop in a similar way to their tropical reef counterparts. They form unique ecosystems, within which,

one may be able to find more than 600 different animal species. With the help of the underwater craft, JAGO, the coral reef will be able to be examined, photographed and probed. A scientist will be able to accompany the crafts pilot down to about 400 meters below the sea.

The second stage of the expedition will be lead by Dr, Michael Klages (AWI) and will go to the Håkon-Mosby mud volcano, located off the Norwegian coast. It is an underwater discharge point for methane gas at a depth of 1250 meters. The investigation of this mud volcano will occur with the help of the remote-controlled underwater vessel "QUEST" from the MARUM at the University of Bremen. QUEST will also be used in the third stage of the expedition in the so-called "Hausgarten". The Alfred Wegener Institutes' "Hausgarten" is one of ten deep-sea observatories belonging to the European Union, and supported by ESONET (European Seas Observatory NETwork). In addition their the normal program, experiments will be carried out with the help of QUEST in order to investigate the deep-sea under natural conditions during which samples will also be taken.

The investigation at the cold water corals, the mud volcano and the "garden house" underwater observatory are all part of the European HERMES project. This project coincides with the International Polar Year, and aims to contribute to the knowledge on species diversity, structure, function and dynamics of different ecosystems along the coastline of the European continent. The results may help to influence future guidelines for European marine politics. HERMES will investigate European deep-sea ecosystems, and then these will be compared with each other. The results will then be used to create models, with the hope that these sensitive ecosystems may then be able to be simulated. Various ecosystems will be selected, locations starting from Spitsbergen in the North, around the Norwegian coast, and up to the Black Sea will be studied. A particular priority will be the so-called "hot spots". They are can be defined as systems that are under strict

physically control, for example, unstable continental slopes, deep sea ditches, deep water corals, cold seeping or oxygen free areas, regions colonised by bacterial communities.

These communities are shaped by particularly dynamic boundary conditions. These areas are considered to be very sensitive to both local and worldwide changes. In addition, due to their important global context in the carbon cycle, they should be intensively researched says Dr. Michael Klages, scientific leader of the second and third stage of this expedition. This section of the journey will end on 25th of July in Tromsø. Finally, the Polarstern will head into the eastern part of the Arctic, and in conjunction with other research icebreakers located in different regions of the Arctic, the condition of the whole Arctic Ocean in relation to climate change will be investigated.

Source: Alfred Wegener Institute for Polar and Marine Research