Geophysical Research Abstracts, Vol. 7, 04830, 2005
SRef-ID: 1607-7962/gra/EGU05-A-04830

Morphology and sedimentology of (clustered) cold water coral mounds at the south Rockall Trough margins, NE Atlantic Ocean

H. de Haas, F. Mienis, T.C.E. van Weering, H.C. de Stigter, T.O. Richter

Royal Netherlands Institute for Sea Research, P.O. Box 59, 1790 AB Den Burg, The Netherlands (haas@nioz.nl/fax +31 222 319674)

At the SW and SE margin of the Rockall Trough cold water coral (*Lophelia pertusa* and *Madrepora oculata*) covered carbonate mounds are present that reach a height of up to 350 m above the surrounding seabed. The mounds on both sides of the Rockall Trough have a strongly different morphology. Single isolated mounds occur on the SE margin and are mostly found on the upper slope in water depths between 900-650 m, while large clusters of mounds are found on the SW margin in water depths between 500 and 1200 m, in a narrow zone almost parallel to the slope. These mounds have been studied using box- and pistoncores, seabed photograph and -video equipment and 2- and 3D seismic surveys. Sedimentation rates on the mounds are higher than on the surrounding seabed as a result of baffling of biogenic carbonate debris and sediment particles by the corals covering the mounds. The 3-dimensional coral framework and the presence of extensive hardgrounds are thought to be responsible for the stability of the relatively steep slopes of the mounds. In the intramound areas high current velocities result in local non-sedimentation and erosion, as is shown by the presence of IRD lag deposits on the seabed. A comparison of the Rockall Trough mounds with fossil carbonate mounds (Devonian of Belgium, Morocco and Algeria; Silurian of Canada) suggests that the recently active mounds on the European continental margin cannot be considered as analogues of their fossil counterparts.