COMMUNITY STRUCTURE AND PROCESSES IN THE DEEP-SEA BENTHOS

Belgian participating laboratory : Magda VINCX & Ann VANREUSEL, University of Gent, Department Morphology, Systematics & Ecology, Zoology Institute, Marine Biology Section, Ledeganckstraat, 35, B-9000 Gent, Tel : +32 9 264.52.10 — Fax : +32 9 264.53.44
Project-leader : A. RICE, Institute of Oceanographic Sciences, Deacon Laboratory, Wormley, Surrey, GU8 5UB, England
Other participating laboratories : Natural Environment Research Council (GB), University College Galway (IRL), Universität Hamburg (D), Institut Océanographique 'Fondation Albert I Prince de Monaco' (F) & Universidade de Lisboa (P)

The deep ocean sediments are the main ultimate repository of anthropogenic carbon. Biota have a crucial role in water column/sediment exchanges. Recent results indicate that the deep-sea benthos is one of the highest biodiversity environments on earth. The diversity is maintained by natural spatial and temporal disturbances on scales ranging from centimetres to kilometres and from days to decades. The main strategic tasks facing deep-sea biologists are a) to describe and explain the variability of the sea-bed communities, b) to understand the influence of disturbance of various types on the structure and functioning of these communities, and c) to attempt to predict how the biota are likely to respond to large-scale anthropogenic perturbations. Therefore, following topics are investigated (1) the natural structure and variability in offshore benthic populations of the north-east Atlantic ; (2) the processes in the physical, chemical and biological environment ; (3) the description of the trophic network in the benthic boundary layer and the organic carbon flux through the deep-sea benthic ecosystem ; (4) the prediction of the changes associated with natural and anthropogenic disturbance.

The Belgian contribution is related (1) to the bioenergetics of meiofauna and small macrofauna in order to asses the role of these fractions of the benthos in the total energy flow through the community by interrelating their standing stock, that of the microbial community and the grazing rates of one on the other, and (2) to modelling the relationship between size and abundance of deep-sea animals as a possible general ecological paradigm.

References

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