

BIOLOGICAL OCEANOGRAPHY COMMITTEE

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Zooplankton Research (Daro, M. H.; Borremans, C.; Bogaert, M.)

This research is a part of a general research program on the functioning of marine ecosystems. Comparisons are made between different ecosystems of the Channel and the North Sea (English and Belgian and Dutch coast, Southern Bight, Northern North Sea). More attention is given to the role of grazing in these systems. Shipboard experiments were carried out and we could show that the deeper and more stratified the water column is, the more important is the role of the zooplankton by its grazing activity. The vertical distribution and day/night vertical migrations seem to also play a role in the grazing pressure on the phytoplankton.

Practical applications of this research are found in our study on the transfer of heavy metals and PCB's through the first levels of the food chain: in shallow water contaminants are more attached to the particulate matter (organic or net) where phytoplankton is the most important carrier. In deep ecosystems, phytoplankton passing through zooplankton and contaminants will reach the bottom in the form of fecal material.

The geographical distribution of fish larvae and eggs (coastal and pelagic) is also a part of the zooplankton section, as well as their feeding behaviour and diet (by stomach analysis).

Copepod Population Dynamics (Bergmans, M.)

Laboratory studies of the life cycle of Tisbe species (Copepoda, Harpacticoida) are conducted with a view to understanding population processes in the field.

Special attention is given to the possibility of fine-tuning of certain demographic traits (such as the primary sex ratio or the age-specific net maternity distribution) as a function of demographic conditions.

Non-Living Particular Organic Matter (Pissierssens, P.)

Little is known about the role of Non-Living Particular Organic Matter (detritus) in the food mass of marine copepods. Therefore, our research is concentrated on three aspects:

1. study of the NLPOM distribution in the Belgian Coastal Zone
2. estimation of the contribution of the NLPOM to the total food mass of marine copepods.
3. study of the origin and composition of the NLPOM.

Impacts on the Environment of the Cooling Systems in Power Plants  
Ecological Aspects, Bibliography Work (Bossicart, M.; Joiris, C.)

Primary Production (Joiris, C. and A. Bertels)

1. Incubation under fluctuating light conditions, in order to obtain a better evaluation of the real in situ net production.
2. Determination of phytoplanktonic respiration in order to determine its relative role in total planktonic respiration.

Seabirds Quantitative Distribution, in Connection with  
Oceanological and Ecological Parameters (Joiris, C.)

Marine Ecotoxicological (Joiris, C., Delbeke, K.)

1. Estimation and comparison of transfer mechanisms of organochlorine residues (mainly PCB's) and mercury in marine ecosystems (particulate matter, zooplankton, fish, seabirds, and sediments).
2. Comparison of contamination levels of different ecosystems (Atlantic and coastal North Sea).