

# STRUCTURE AND FUNCTION OF THE BENTHOS IN ESTUARINE AND COASTAL MARINE ECOSYSTEMS IN RELATION TO THE PRESENT AND FUTURE ANTHROPOGENIC IMPACT

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A successful understanding of the role of estuaries as nutrient traps, filters, or exporters requires a knowledge of the distribution of dissolved and particulate nutrients as well as their rates of input, loss and accumulation in coastal waters.

In estuaries and shallow coastal areas, in contrast to the open sea, a large part of the primary production and of the allochthonous detrital material can be metabolized by the benthos.

In polluted areas (as is the case for the Westerschelde and the Belgian coastal area), meiobenthos and hyperbenthos seem to be important in the energy flow of the ecosystem ; both benthic compartments occur in very large numbers and are important in nutrient recycling (meiobenthos) or as food (hyperbenthos) for higher trophic levels such as fishes. Their exact role in the marine benthic ecosystem can be derived after knowledge of their spatial and temporal variability and by the investigation of the energy flow through the system. Both 'benthic' communities can be used as indicators for anthropogenic influences. Temporal and spatial distribution patterns are investigated and the relationship with biogeochemical fluxes within the sediments will be evaluated. Fluxes from microbiota to meiobenthos and from the detrital food chain to hyperbenthos will be quantified in order to make a trophic time dynamic model.

## *References*

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