BENTHOS: AN INDICATOR OF THE HEALTH OF THE SEA

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Macrobenthos

Macrobenthos are animals larger than 500µm that live in or on the surface of sediments. The animals and therefore the communities respond to stresses applied by human activities (e.g. waste disposal or construction work). Many effects of these activities can be observed using benthic communities.

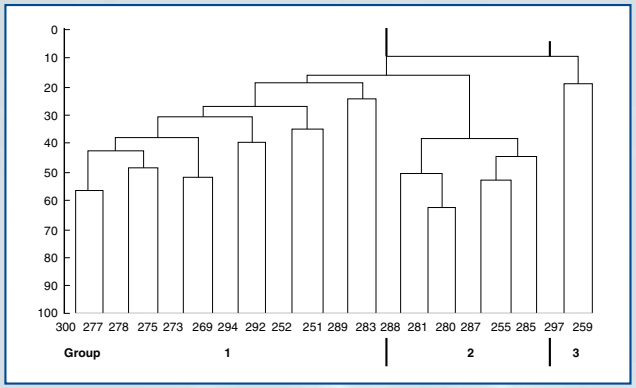

Figure 1. Output from cluster analysis of the macrofauna data, employing the Bray-Curtis similarity index and 'group-average' sorting.

Sieving a sediment sample.

Meiobenthos from sediment.

Meiobenthos

Biological assessment of the effects of human activities on the marine environment has often consisted of an analysis of the macrobenthos (Pearson and Rosenberg, 1978; Gray, 1979). Recently it has become clear that meiofaunal communities (animals passing through a 500µm sieve and retained on a 63µm sieve) appear to be more sensitive to short-term events, in contrast to macrofaunal communities, which may reflect longer term changes in disposal practices (Somerfield et al, 1995).

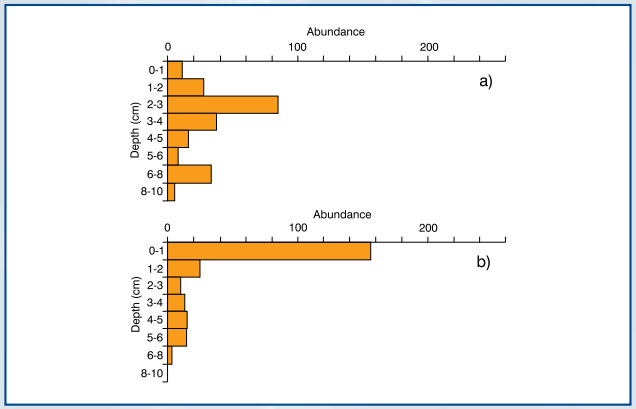

Figure 2. The vertical distribution of Richtersia inaequalis at (a) a dredging disposal site in Liverpool Bay and (b) the reference site.

Epifauna (epibenthos)

The epifauna are animals that live on the surface of sediment. This group (including starfish, crabs and shrimps) has an important role in the marine food chain. It has received much less attention than infauna, due largely to sampling difficulties.

In 1990 the North Sea Task Force established several stations in the North Sea and English Channel for the sampling of water, sediments and biota. The purpose was to generate information on the concentrations of contaminants and on the 'well-being' of biological systems.

At all of these monitoring stations, the main target for the assessment of biota has been the animals living within the sediments, i.e. the infauna. While these animals were sampled, the opportunity was taken to sample the animals living on the surface of the sediments, i.e. the epifauna. A beam trawl was used to collect various animals (including starfish, crabs and shrimps).

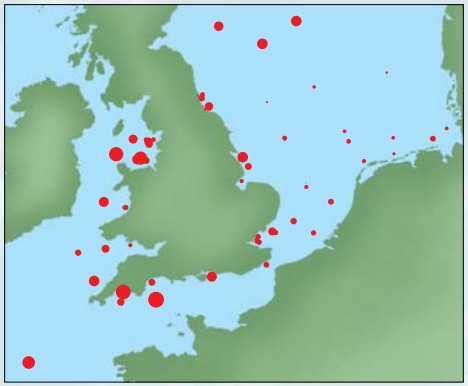

Figure 3. Numbers of taxa in two-metre beam trawl samples. Circles are scaled relative to the highest value encountered.

References

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