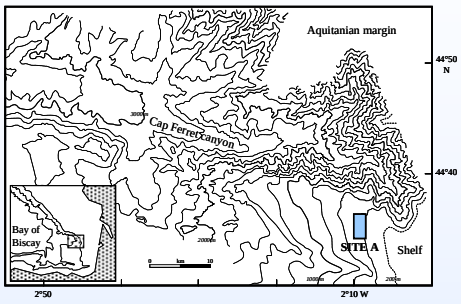
Temporal changes in the structure of an upper slope suprabenthic community from the Bay of Biscay

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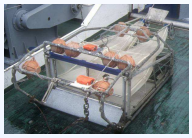
Sampling site



Introduction

Suprabenthos includes small-sized bottom-dependent animals (mainly crustaceans) which perform, with varying amplitude, intensity and regularity, seasonal or daily vertical migrations above the sea floor (Brunel et al., 1978). The present study aims to describe temporal changes in the structure of a bathyal suprabenthic community from the southern margin of the Cap Ferret Canyon (site A), based on the analysis of samples monthly taken from February 91 to January 92 (October not sampled).

Suprabenthic sled



Material & methods

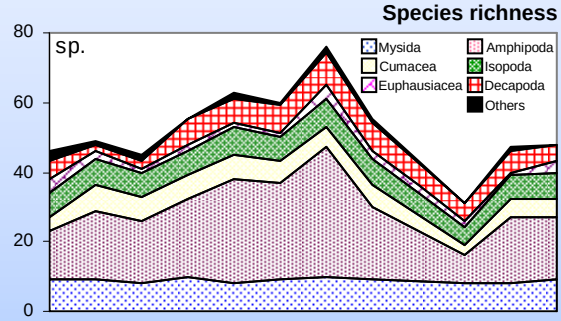
The suprabenthic fauna was sampled with a sled equipped with 4 nets (0.5 mm mesh size) and a mechanical opening-closing system activated by contact with the sea floor (Sorbe, 1983). Towed at ca 1.5 kn, this sled samples the motile fauna in the two near-bottom water layers 0-50 and 50-100 cm (the last one not considered herein). A TSK flowmeter is used to estimate haul lengths, in order to calculate bottom areas swept by the sled and abundances expressed as ind./100 m². Specimens were identified to species level whenever possible and counted. Univariate (diversity indices) and multivariate analyses were carried out on abundances with PRIMER *v*5 (Bray-Curtis similarity measure after fourth root transformation of data).

Results

Species richness and diversity measure

On the whole, 27285 specimens were collected, belonging to a minimum of 109 species (56 Amphipoda, 12 Mysida, 10 Isopoda and Decapoda), 9 Cumacea, 6 Euphausiacea, 4 Actinopterygians, 1 Tanaidacea and Lophogastrida). Total species richness fluctuated between 76 sp. haul^{-1} in August and 31 sp. haul^{-1} in November. Such fluctuations were mainly related to amphipods (range: 37 sp. haul^{-1} in August, 8 sp. haul^{-1} in November). Furthermore, amphipods were the most speciose group in all samples, generally followed by mysids and isopods. The diversity index H'($\log_2$) ranged between a minimum of 2.30 in April and a maximum of 4.01 in September.

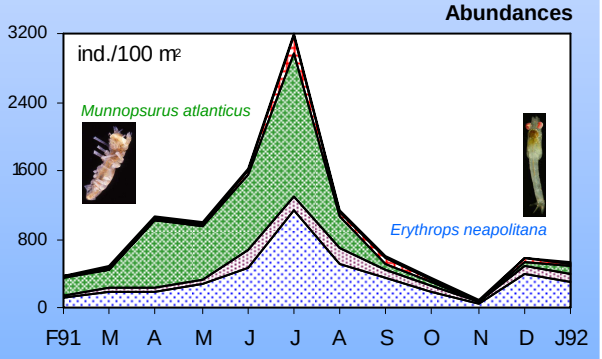
Species richness



Abundances

Total abundances fluctuated between 3199 ind./100 m² in July and 82 ind./100 m² in November with a monthly mean of 969 ± 602 ind./100 m². As demonstrated by their monthly abundances, isopods were the most dominant group during the first part of the year (February-July) whereas mysids ranked first during the second part of the year (August-January). This trend was statistically significant for isopods (Mann Witney U test; $P < 0.05$), but not for mysids ($P > 0.05$). Both isopods and mysids peaked in July and were responsible of the observed abundance fluctuations within the community. At species level, the isopod *Munnopsurus atlanticus* showed the same temporal abundance pattern than the whole fauna (range: 1461 ind./100 m² in July, 13 ind./100 m² in November). This isopod was significantly dominant during the first part of the year (February-August; Mann Witney U test; $P < 0.05$) whereas the mysids *Erythrops neapolitana* or *Parapseudomma calloplura* ranked first during the rest of the year (not statistically significant).

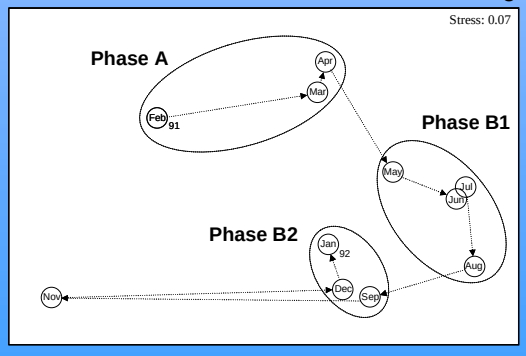
Abundances



Multivariate analysis

This analysis discriminates 3 successive phases during the annual cycle (November discarded due to low total abundance; average within group similarity > 68 %; average between groups dissimilarity < 38.4%): phase A (February-April) with the dominance of the isopod *Munnopsurus atlanticus* and the mysid *Parapseudomma calloplura* (64.1% of total abundance): phase B1 (May-August) with the dominance of the same species but with higher abundances (61.0%) and phase B2 (September-January) with the dominance of the mysid *Erythrops neapolitana* and *Mysideis parva* (42.7%). All the aforementioned species are permanent components of the community (occurrence in all samples).

Multidimensional scaling



Conclusion

Although located in a deep environment known to be more stable than adjacent neritic areas in terms of near-bottom temperature, salinity, dissolved oxygen and sediment disturbance, this bathyal suprabenthic community shows wide structural changes during the year, mainly related to population dynamics of a few key species such as the foraminifer-eating *Munnopsurus atlanticus* and the detritivorous/omnivorous *Erythrops neapolitana* (see Elizalde et al., 1999; Cartes & Sorbe, 1998).

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