

DISTRIBUTION OF SOFT-BOTTOM POLYCHAETES IN THE GULF OF SALERNO (TYRRHENIAN SEA)

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*Laboratorio di Ecologia del Benthos (Stazione Zoologica di Napoli), Ischia (Italy)*Resumé

On a étudié la distribution des Polychètes dans les fonds meubles du Golfe de Salerno (Mer Tyrrhénienne), entre -2 et -75m. Plusieurs entre les 155 espèces identifiées montrent une distribution caractéristique. Il est possible l'identification de 4 communautés distribuées de la côte vers le large et en relation avec la structure des sédiments. La diversité (H') avait les valeurs les plus hautes dans la communauté des sédiments mixte sablo-vaseux qui probablement offrent un plus grand nombre de niches et conditions favorables pour plusieurs espèces.

The distribution of Polychaetes was studied in the framework of our investigation on the composition and structure of soft-bottom communities in the Gulf of Salerno (Tyrrhenian Sea) (GAMBI et al., in press). The investigated area was a large, sandy shore zone extending from the harbour of Salerno to the mouth of the river Sele, 14.5 miles long and 5.5 miles wide. A dense prairie of *Cymodocea nodosa* is present in this area from 8 to about 15-17 m depth (Fig. 1).

Samples were taken in December 1981 and included 43 samples of benthos collected from 2 to 75 m depth using a "Charcot" dredge.

A total of 11,818 individuals belonging to 155 taxa (57 Errantia and 98 Sedentaria) were present in all samples collected. 137 taxa were identified to species level and 17 to genus level. 25 species appeared only once with few individuals.

It was possible to recognize different species groupings with characteristic distributional pattern. Some species had coastal distribution from 2 to about 10-15 m depth associated with sandy sediments: *Dispio* sp., *Magelona papillicornis*, *Nephtys cirrosa*, *Lumbrinereis impatiens*, *Tharyx multibranchiis*, *Onuphis eremita*. Other species as *Prionospio caspersi*, *Spiophanes bombyx*, *Cauleriel-la alata*, *Diopatra neapolitana*, *Lumbrinereis gracilis*, *Phylo foetida*, *Pherusa monilifera*, *Owenia fusiformis*, *Myriochele heeri*, *Chone duneri*, *Sthenelais boa*, *Nephtys hombergii*, *Pectinaria koreni*, were present both in sandy coastal zone and in deeper areas (25m) where sediment was enriched by mud and organic mat-

ter. In the intermediate zone between 10-15 m and 35 m depth, several species associated with muddy-sand sediments were present: *Eunice vittata*, *Scolarycia typica*, *Euclymene oerstedii*, *Diplocirrus glaucus*, *Psammolyce inclusa*, *Phyllodoce lineata*, *Hyalinoecia bilineata*, *Glycera unicornis*, *Magelona cf. alleni*, *Leiochone clypeata*, *Chone collaris*, *Spiophanes kroyeri*, *Pista cristata*, *Tharyx heterochaetus*, *Sabellides octocirrata*. As we proceeded offshore, the sediment became richer in fine fractions and species characteristics of muddy sediment appeared: *Harmothoe lumulata*, *Nephtys hystericis*, *Glycera rouxi*, *Marphysa bellii*, *Sternaspis scutata*, *Chaetozone setosa*, *Terebellides stroemi*, *Notomastus latericeus*, *N. aberans*, *Euclymene gracilis*, *Amphicteis gunneri*, *Paralacydonia paradoxa*, *Ninoe armoricana*, *Maldane glebifex*, *Aricidea simonae*. Lastly, *Goniada maculata*, *Melinna palmata*, *Ampharete acutifrons*, *Lumbrinereis emandibulata-mabiti*, showed a wide distribution.

Total abundance, species richness and diversity (Shannon-Weaver, H') are gi-

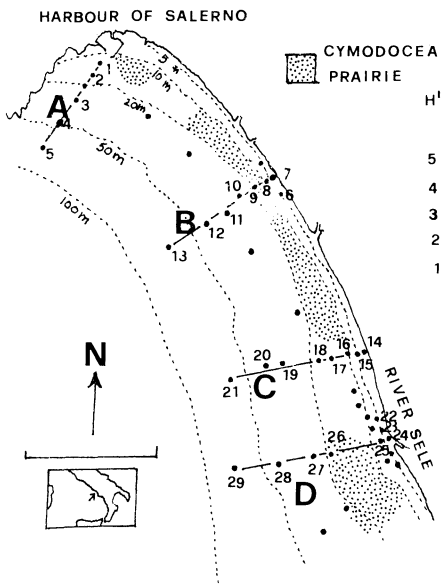


Fig. 1. Map of the studied area with sampling sites.

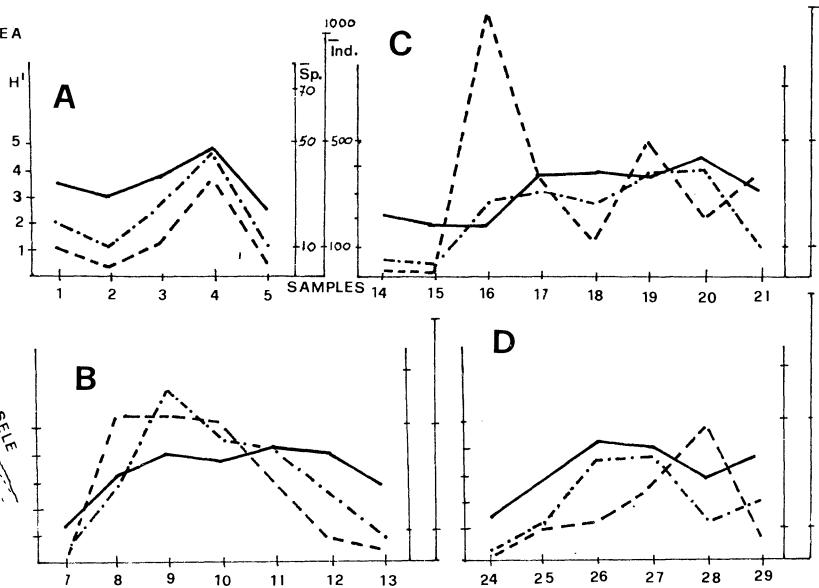


Fig. 2. Trends of diversity —, species richness —•— and abundance — — in four transects perpendicular to the coast.

ven for four transects perpendicular to the coast (Fig. 2). All of these parameters had a quite similar trends, showing maxima in the intermediate zone between 15m and 40m and minima in the coastal zone below 10m depth. Only the abundances sometimes showed peaks due to the redundancy of species such as: *C. duneri*, *O. fusiformis*, *S. scutata*.

The species composition and abundances, therefore, changed along a grain-size gradient from the coast to the open sea and it was possible to identify four communities related to the sediment type:

- a high energy coastal community between 2m and 5-8m depth, characterized by medium and fine sands and containing few well specialized taxa
- a low energy coastal community with sandy sediments enriched by mud and organic matter
- a mixed sediment community located from the lower limit of *C.nodosa* prairie to 35-50 m depth, with highest species richness and diversity
- a muddy sediment community in the deeper areas of the Gulf.

The species succession in these communities was continuous since several taxa had overlapping distribution, mainly in the intermediate area corresponding to mixed sediments. Nevertheless it was interesting to note that several congeneric species showed distribution that excluded each other.

The highest diversity and species richness found in the intermediate zone, were probably related to the high heterogeneity of the sediments and the lower hydrodynamic stress that determine a larger number of niches and favourable conditions for the settlement of many species. By contrast, the high energy coastal zone seemed to be very selective environment for Polychaete syntaxon.

Reference

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