

Plankton resting stages distribution in bottom sediments along the confinement gradient of the Taranto Sea System (Ionian Sea, Southern Italy)

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ABSTRACT

The distribution of abundance and species richness of plankton cysts has been investigated in the surface bottom sediments of the Taranto Marine System (a series of 4 basins with growing confinement degree) in southern Italy. The investigation has interested an autumnal date (November) with the aim to intercept a period of rich cyst production from the plankton before overwintering. Analyses of a total of 36 sediment cores, gave as main result the abundance of cysts in confined basins with a direct correlation to the water column extension and/or the plankton abundance. In addition, also a richest species richness was found in the confined basins of the system, contrarily to the species richness in the water column which is typically poor in more confined areas. The abundance and the diversity of dormant stages (cysts) in the sediment ask to be more deeply considered in studies of plankton dynamics, suggesting an intense species succession and/or shift in the water column of the confined portion, where more variable environmental conditions give problems to long life cycles in the plankton. These problems are resolved with the shortage of life cycles and even their interruption and production of resting stages sinking in the bottom sediments, where the plankton biodiversity is even higher than in the water column at each moment.

KEYWORDS: resting stages, cyst bank, confined coastal areas, Dinophyta, Copepoda, plankton, resurrection ecology, Taranto Sea System.