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Benthic foraminifera distribution in marine sediments from Naples Harbour, Southern Italy

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Multidisciplinary studies were carried out in the last three years in the Naples Harbour, located along the Campanian coast (Southern Tyhrrenian) in order to determine morphobathymetric, sedimentological, geochemical, and petrophysical characteristics of bottom sediments and to identificate the most critical pollutants related with sediment components and to support engineering projects to realise new ones.

The distribution of benthic foraminifera, their diversity and their population density combined with the distribution of physical and chemical (TOC, TON, organic compounds and heavy metals) parameters have been studied in order to provide new indication for estimating bottom sediment conditions.

Population growth and the resultant acceleration of domestic, municipal, industrial and agricultural activity are the primary causes of anthropogenic pollution of the marine realm. Such pollution produces numerous obvious biological effects, including diseases in animal species, local or complete extinction of some species and changes in community structure. In the study area the benthic foraminifera assemblage is poor and mainly represented by few small species. High concentrations of heavy metals such as Cr, V, Cu, Zn, Cd, Hg, Pb and As have a marked effect upon foraminiferal distribution. Increasing pollution, moving from eastern to western part of the harbour, results in low species diversity and population density, associate with an increase in tolerant or opportunistic species. This is characteristics of a restricted or confined en-

vironment under stress caused by high level of industrial and domestic pollution. The tolerance to pollution of *Ammonia tepida*, is well represented by an oligotypic assemblage which characterize the first 0 – 50 cm sediments. Based on the presence of dead population, it could be speculated that *Ammonia tepida* is the most opportunistic species, able to compete successfully in polluted environments and can be considered as a heavy metal pollution indicator in the harbour of Naples.

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