

Mediterranean Marine Science

Vol 26, No 1 (2025)

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doi: [10.12681/mms.37946](https://doi.org/10.12681/mms.37946)

To cite this article:

PELUSI, A., ROMERO MARTÍNEZ, M. L., MULE, A., SCALCO, E., BARRENECHEA ANGELES, I., PIREDDA, R., KOOISTRA H.C.F. , W., MONTRESOR, M., & SARNO, D. (2025). Diatom distribution and long-term survival in a heavily polluted sediment core from the Bay of Bagnoli (Tyrrhenian Sea, Italy). *Mediterranean Marine Science*, 26(1), 40–54. <https://doi.org/10.12681/mms.37946>

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Mediterranean Marine Science, 26 (1) 2025

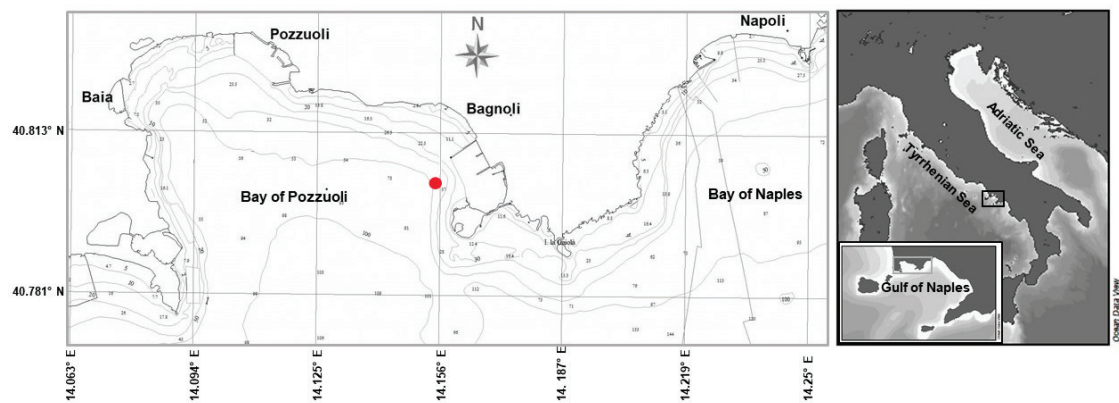


Fig. S1: Map of the Bay of Pozzuoli (Tyrrhenian Sea, Mediterranean Sea) with the location of the site at which core AB1 was collected (red dot).

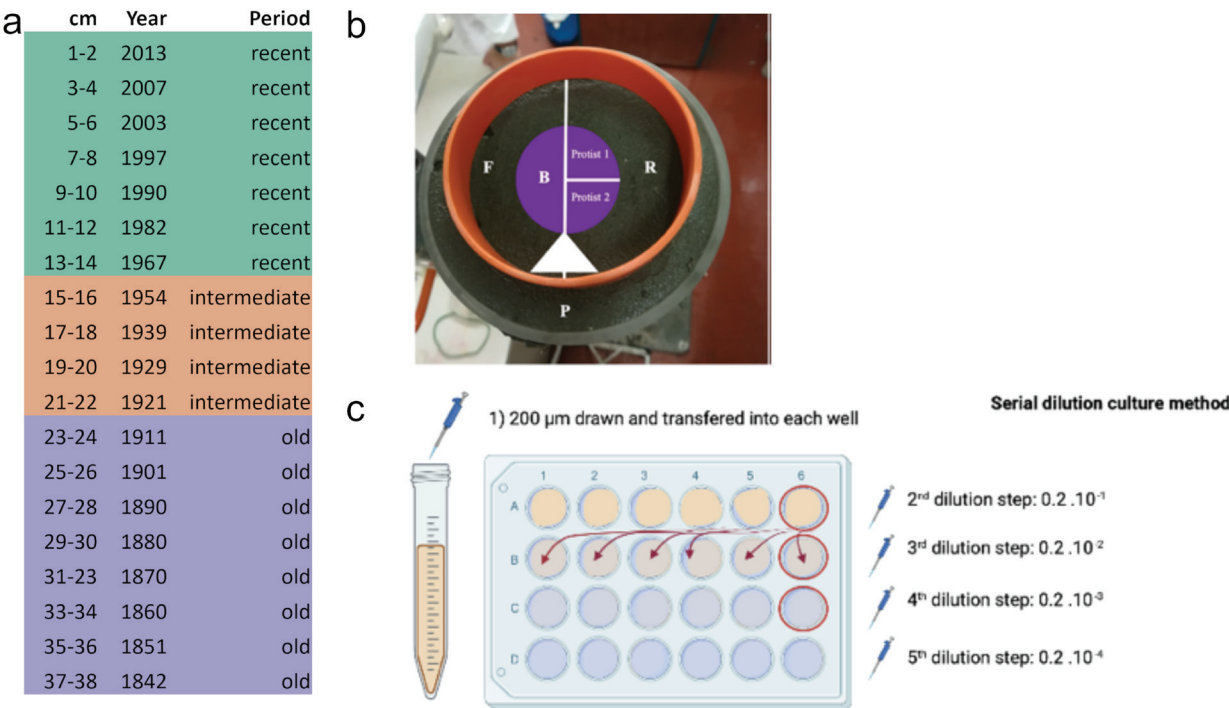


Fig. S2: a) Sediment layers of core AB01 on which sedDNA barcoding analysis was carried out. For each layer are indicated: the year (^{210}Pb and ^{226}Ra dating, see (Barrenechea Angeles *et al.*, 2023) and the three periods identified by Multidimensional Scaling analysis (Fig. 1). b) Partition of the individual 1-cm sediment layers into subsamples for different biological analyses: Protist 1 and Protist 2 for eukaryotic metabarcoding, R for SDC analyses. c) Schematic representation of the Serial Dilution Culture (SDC) setup.

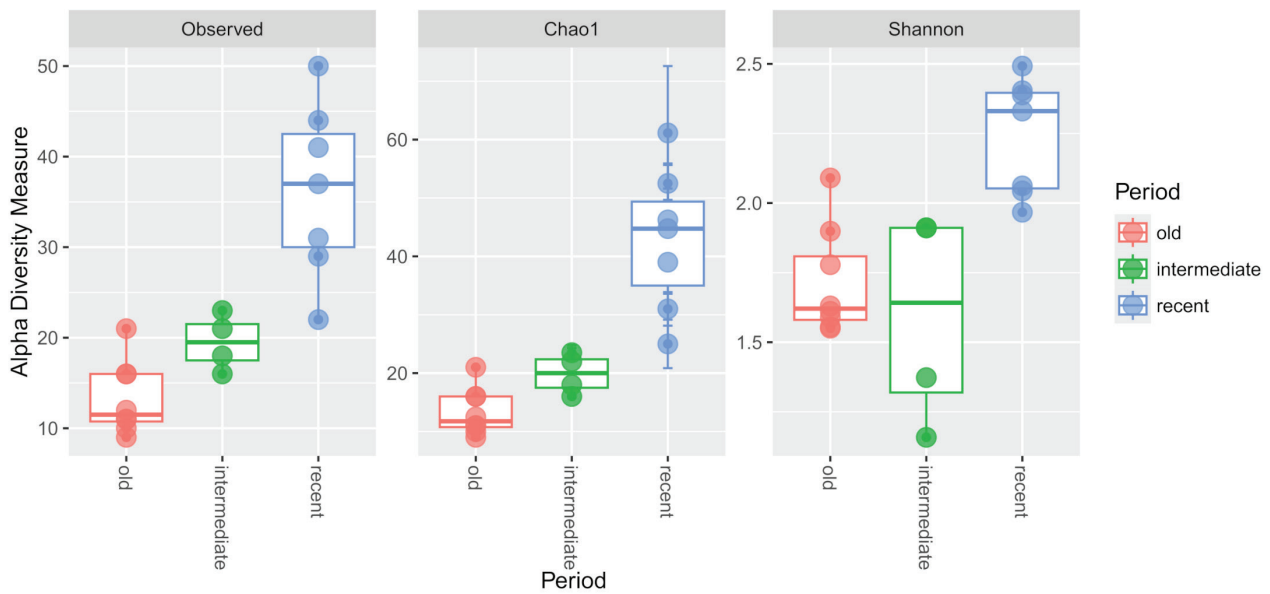


Fig. S3: Estimates of alpha diversity: Richness (Observed ASVs), Chao1 and Shannon index.

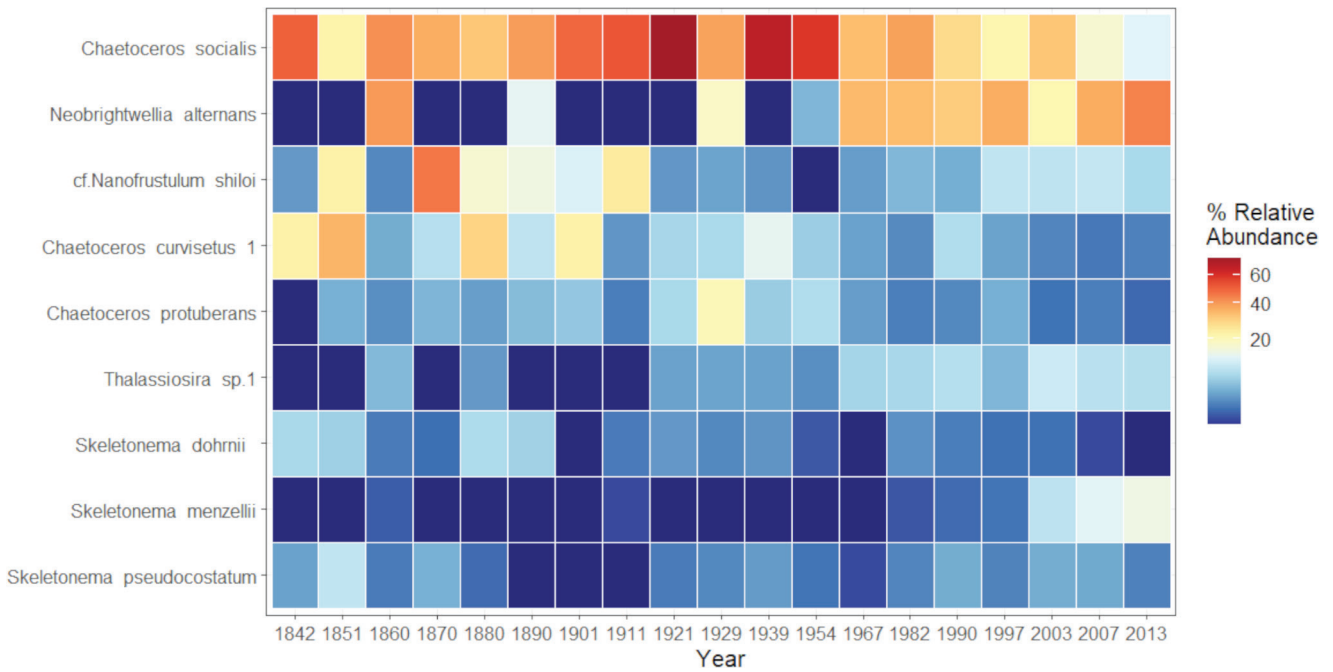


Fig. S4: Heatmap illustrating relative abundance of the most abundant diatom ASVs assigned to the species level.