

Benthic foraminiferal species tolerance for hydrothermal activity: a case of study from the Lucky Strike vent field.

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Table S1

(Excel sheet attached as Table S1). File containing the raw data of X ray Fluorescence analyses and additional information on methodology.

Figure S1

Living benthic foraminiferal (>63 µm) specific richness (A), Shannon diversity index (B), counting (C) and rarefaction curves (D) for the 11 cores with available environmental data and non-null count of foraminifera.

Figure S2

Pore water profiles of selected dissolved metals.

Figure S3

¹⁴C dating measured on planktonic foraminiferal species *Neogloboquadrina pachyderma* in two cores collected in reference and close to Eiffel Tower edifice.

Methods

Rhizomes connected to pre-drilled blade cores were used to collect pore water at each station: every 5 mm at the top core (0-20 mm) and every 20 mm below. Two out of the seven stations were not analyzed due to the lack of available water in the sediment (i.e., MS N and MS). All samples have been preserved for future analyses of metals and sulfate in laboratory, adding 10 μM of HNO_3 (40%) per ml of sample.

Results

Pore water chemistry has been investigated in one core at five stations (except for MS and MS N) of the study area (Figure S4), focusing on metal concentrations to investigate the dissolved elements derived from hydrothermal fluids. Most of the cores displayed low and constant dissolved metal content, except for SC_CL6 and Cap_CL6 that were enriched in all elements. However, these two cores showed opposed signals in Fe and Mn with high concentrations in the bottom horizon (250 and 5 $\mu\text{mol kg}^{-1}$, respectively) decreasing upward in Cap_CL6 while these high values characterized the top horizon in SC_CL6 (103 and 2 $\mu\text{mol kg}^{-1}$, respectively), decreasing with increasing sediment depth. Relatively high concentrations of Ba (2 $\mu\text{mol kg}^{-1}$) and Cu (14 $\mu\text{mol kg}^{-1}$) also characterized the first centimeter of SC_CL6. Zn concentration was high in Cap_CL6 only, reaching 72 $\mu\text{mol kg}^{-1}$ at 80 mm.

Table S2

Excel sheet attached with raw data of benthic foraminiferal counting of dead and living specimens and their taxonomic references.