



## **Infaunal habitats of bathyal benthic foraminifera in three successive laboratory experiments**

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In three successive laboratory experiments the infaunal distribution of benthic foraminifera from the same collection site in the Bay of Biscay was studied. Over a period of three years on three different occasions sediment containing live foraminifera was collected for laboratory experiments. Twenty-four cores took part in the different experiments and a direct comparison is made with field data.

In all experiments the restoration at assemblage level is very similar after initial mixing of the sediment and the species composition is not altered. The infaunal distribution patterns of individual species may vary with time in both the experiments and the field. The vertical succession of assemblage composition, in cores from the same date, however, is remarkably similar. A significant correlation exists between optima of taxa that share a similar range of optimum depths. Shallow living species are correlated to intermediate taxa, which in turn are correlated as well to deep living taxa, without a significant correlation between the shallow and deep optimum groups.

The results show that experiments with bathyal benthic foraminifera in sediments are replicable under laboratory conditions and that the habitat preferences of foraminifera are not altered in an experimental setting or after mixing of sediments. This study supports the high potential of culture experiments with natural substrates and differentiated infaunal habitats that aim at establishing relationships between environmental parameters and foraminiferal test chemistry as proxies for past conditions.