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## **Spatial and temporal distribution of benthic foraminiferal faunas in the Bay Biscay**

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This presentation gives an inventory of 10 years of research on the ecology of benthic foraminifera in the Bay of Biscay. The density, composition and microhabitats of living faunas collected at more than 25 stations from outer shelf, continental slope and abyssal environments, will be explained by the quantity, quality and periodicity of the organic flux to the ocean floor. Faunas collected in submarine canyons substantially differ from open slope faunas, mainly due to the focussing of refractory organic particles in these environments. A large part of this low quality organic matter will be degraded by anaerobic pathways at several depth in the sediment. Some deep infaunal taxa play an important role in these slow remineralisation processes. A more detailed study shows also important differences between the various canyon sub-environments, where sediment instability seems to be a dominant controlling parameter. Canyon axis environments, that are repeatedly disturbed by abrupt sediment depositional events, are inhabited by extremely rich, but low diverse faunas, that are restricted to the sediment surface. Stations that are more sheltered from such abrupt depositional events, are characterised by much poorer, but more diverse fauna, with a well established microhabitat succession. An 8 year long temporal survey of stations at 140, 550 and 1000 m water depth shows that the benthic foraminiferal faunas respond to the spring phytoplankton bloom by a period of accelerated growth and reproduction. *Epistominella exigua*, *Nonionella iridea*, *Uvigerina mediterranea* and *Uvigerina peregrina* show the strongest response to these events, underlining their opportunistic life strategy. Although mesoscale patchiness (decimetres to decametres) is sometimes important, it does not prevent us to observe temporal variability, which in most cases has a much higher amplitude.