

## Benthic foraminiferal and sedimentological response to the evolution of the Adra submarine delta, northern Alboran Sea

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The Adra submarine delta is located on the northern Alboran Sea shelf in the western Mediterranean Sea. The genesis of this deltaic system is associated with the discharges of the short and mountainous Adra River. The area is under the influence of a Mediterranean climate with sporadic winter torrential flows and increased summer aridity. Major anthropogenic activities in the river system occurred in 1872 AD, with the deviation of the main fluvial course to the east. The channel was silted up in 1910 AD as result of a flood event and relocated further west, at its present position. These artificial changes are reflected in the submarine morpho-stratigraphy of the delta that is composed of two main lobes.

In order to understand the interaction between river discharges and the evolution of the submarine delta at different timescales, two sediment cores were collected from both lobes. A chronological framework was performed and combined with sedimentological and benthic foraminiferal analyses.

Radiocarbon dating of plant debris from the base of the cores indicates that the sedimentary record goes back 250 years BP. The correlation of sediment cores with seismic records indicate that both cores penetrated the same seismic unit, deposited between ca. 1070 to ca. 1872 AD, under the direct influence of the ancient river course. The predominant sedimentary facies is sandy silt with intercalated sand layers. The uppermost core sections are pure sand. The number of benthic foraminifera is generally below 100 specimens per gram. The most abundant species in both cores are *Ammonia tepida*, *Bolivina ordinaria*, *Nonionella stella*, *Reophax arctica* and *Textularia earlandi*. The increases of sand and the low faunal density, followed by increased abundance of successful colonizers and opportunistic species, is interpreted as result of periods of high precipitation, and sediment supply to the shelf, and the subsequent establishment of an environment with new ecological constrains.