

# Assessment of the environmental health status of the Marchica lagoon (Morocco, Mediterranean) using *Cymodocea nodosa* meadows and its associated macrofauna: preliminary results

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The Marchica lagoon is the single lagoon on the Mediterranean coast of Morocco. Beside its ecological and socio-economic values, the lagoon is under pressure of a complex mixture of human-mediated stressors (urbanization, pollution, overfishing, tourism, etc.). Nowadays, many institutional efforts have been undertaken to establish a sustainable management plan of the lagoon in the context of an Integrated Coastal Zone Management (ICZM) approach. Thus, understanding how these stressors impact upon ecological status and ecosystem services is a sound step for any efficient integral management.

Based on sampling performed on June 2014, the present work aimed at assessing the ecological quality status (ES) of the northern part of the lagoon using *Cymodocea nodosa* (Ucria) Ascherson meadows and benthic macrofauna. 16 stations (11 with *C. nodosa* and 5 on bare sediment) were sampled using a Van Veen grab.

Preliminary results showed differences between stations. Shoots biomass fluctuated between 8.02 and 61.2 g dw m<sup>-2</sup> while the roots-rhizomes biomass oscillated between 10.8 and 235.5 g dw m<sup>-2</sup>. The root-rhizome and leaf biomass ratio revealed high values (up to 10.8) in the central sector suggesting a potential nutrient enrichment.

Benthic macrofauna revealed the presence of 90 species belonging to six zoological groups and dominated by crustaceans, molluscs and polychaetes. The assessment of the ecological quality status, based on benthic macrofauna, was evaluated using Biotic Indices (AMBI, M-AMBI, Benthix, BITS). The results showed partial agreement between single index-derived ES and underlined the dependency of these biotic indices on the habitat characteristics, on the one hand, and the necessity to define specific reference conditions to the Marchica lagoon.