



## **A giant field of exposed and buried cold-water coral mounds along the Atlantic Moroccan continental margin**

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An extraordinary high number of coral mounds (formed by framework-building scleractinian cold-water corals) has recently been discovered along the Atlantic Moroccan continental margin. A detailed seabed mapping revealed the presence of more than 3,000 coral mounds in water depths between 700 and 1,000 m. These mounds are arranged to distinct clusters distributed over an area of  $\sim 1,800$  km<sup>2</sup> between 35°N and 35.5°N. They rarely exceed 20 m in height and are covered by fossil corals, which date back to the last deglacial and beyond. Beside these exposed fossil mounds, over 600 mounds were discovered in the region, which are buried beneath the seafloor (Vandorpe et al. 2017). As these 600 buried mounds detected along the hydroacoustic sub-bottom survey lines correspond to  $\sim 100$  exposed mounds and with respect to the number of mapped exposed mounds of 3,000, the total number of buried and exposed coral mounds most likely amounts to a remarkably high value of  $\sim 18,000$ . The Moroccan mounds initiated on at least ten different horizons, which are displayed as strong reflectors in the hydroacoustic sub-bottom data. All of them most likely related to glacial periods since the Early-Middle Pleistocene Transition (Vandorpe et al. 2017). However, the coral mounds not just root on these horizons, some of them are also buried below the reflectors. Frequently, several generations of coral mounds occur on top of each other, whereas in other places buried and exposed mounds occur side-by-side, though they originate from the same reflector. Thus, off the Atlantic Moroccan margin, it appears that only small differences decide on the evolutionary fate of the coral mounds, meaning, whether they become buried or keep on growing during the next period of sustained coral proliferation. This variable response combined with a dynamic paleo-environmental setting creates a diversity in individual mound histories that has never been described before. It becomes more and more obvious that coral mounds are ubiquitous seafloor structures capable of adopting to a variety of settings – sometimes successful, sometimes not.

References: Vandorpe T, Wienberg C, Hebbeln D, Van den Berghe M, Gaide S, Wintersteller P, Van Rooij D (2017). Multiple generations of buried cold-water coral mounds since the Early-Middle Pleistocene Transition in the Atlantic Moroccan Coral Province, southern Gulf of Cádiz. *Palaeogeography, Palaeoclimatology, Palaeoecology* 485: 293-304.