



## The 'Santa Maria di Leuca' *Lophelia* reefs of the Mediterranean Sea: state-of-the-art and on-going research

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The 'Santa Maria di Leuca' *Lophelia* reef (SML) is the only deep coral mound province reported so far from the Mediterranean basin. It occurs off the Apulian margin in the eastern Ionian Sea and was discovered in the year 2000. In 2002-2005, the SML has been the target of intense geo-biological investigation fostered by international (ESF Eurocores 'Moundforce') and national (Italian FIRB 'Aplabes') programs. Seabed topography and subsurface geology have been imaged through multibeam bathymetry coupled with a dense grid of high-resolution seismics and sedimentological samples (cores, grabs). Chemo-physical attributes of the water column have been recorded by means of CTD-rosette casts taken in different seasons. Extensive biological investigation (including microbiology and fish stock evaluation) was conducted at various coral and non-coral sites, resulting in the assessment of their biodiversity. The MODUS+GAS-SCIPACK instrumented module (equipped also with methane-sensors) provided the first visual inspection of the coral mounds in spring 2005. SML major frame builders are the branching corals *Madrepora oculata* and *Lophelia pertusa* and to a lesser degree the solitary taxa *Desmophyllum dianthus* and *Stenocyathus vermiformis*. Colonies preferentially settle on firm- and hardgrounds between 300-1200 m with maximum growth at present located at around 500-700 m. Corals are represented by both live and fossil occurrences and colonies occur, although discontinuously, over a wide shelfal area conservatively estimated at c. 400 square km. Further multidisciplinary research on SML is planned in the frame of the 'Aplabes' and

EU 'Hermes' programs up to 2007.