



Seafloor morphology: nature of the seabed and the cold water corals of the Levante Canyon (eastern Ligurian Sea, NW Mediterranean)

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The Levante Canyon, located approximately in the offshore area of Cinque Terre (eastern Ligurian Sea, NW Mediterranean), was investigated in autumn 2013 onboard Italian Navy Ships through high resolution multibeam (MB), side scan sonar (SSS) and image data acquired by a Remotely Operating Vehicle (ROV) in order to study the seafloor features and ecological characters.

First data allow us to produce a seabed mapping of the study area with high detail of seafloor shapes, to be extended to other similar sectors of the canyon catchment area, constituted by a dendritic pattern of each individual gully network. The highest values of slope (17°) can be found in the steep canyon heads and flanks. Slope values up to 10° can be seen depicting sea-bed mounds on the northernmost and central interfluvium. MB and SSS data show higher acoustic backscatter in the deepest sections of the canyon than interfluvium and the changes in the sea-bed nature over the mounds are highlighted as areas of variable intensity. ROV images were recorded from 510 m depth up to 370 m and suggested the presence of biological communities, mainly typical of deep muddy bottom, and small cold water coral colonies, possibly identified as *Madrepora oculata*.

This survey provides not only a detailed mapping of the variable morphology of the proximal area of the Levante Canyon, but it also investigates the seabed nature and biological communities within the canyon system for the assessment of a potential Site of Community Importance (SCI) under the European Commission Habitats Directive (92/43/EEC). In particular cold water corals (CWC) provide a complex structural marine habitat hosting high levels of biological diversity, which are in the reef habitat three times higher compared to the surrounding seabed. For this reason they fall within the habitats that deserve protection (EU-Habitat 1170 "Reefs").

Preliminary observations and data interpretations suggest that the Levante Canyon shows interesting geomorphologic underwater features. Further studies, already planned, will focus on ecological aspects, for a complete characterization of the habitat of CWC to suggest appropriate protection measures.