Detection and characterization of deep-coral banks in the Cap de Creus Canyon (North western Mediterranean) using visual and acoustic methods

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Dense banks of the white coral *Madrepora oculata* and *Lophelia pertusa* have been visually detected along the walls of the Cap de Creus Canyon, North-Western Mediterranean, in a 200-400 m depth range, by using ROVs and the man submersible JAGO (IFM-GEOMAR) during three cruises (October 2005, July 2006, September 2007). The obtained images offered valuable information for the characterization of the communities (species composition) and abundance of the coral species as well as the conservation stage of them. We identified several patches and sampled selectively organisms in order to identify and set up experimental ecological work with coral species (feeding and physiological ecology). Visual inspections were complemented with two sidescan sonar surveys, carried out in the study area in February and April 2007, using the C-Max 2 model operating at 100 kHz. Acoustic mapping turned out to be a reliable tool in the study of coral facies, offering the possibility to survey greater areas than the ones covered with visual inspections. Moreover, sidescan sonar images gave accurate information about the seafloor backscatter, and some of the observed high-reflective acoustic patches could suggest the presence of corals. During the last survey, carried out in September 2007, we assay to calibrate the sidescan sonar images using the video images from the JAGO. During the surveys we also analyzed the water composition (Particulate Organic Carbon, C/N and Nutrients), as well as the planktonic community close to the sea floor in order to have a comprehensive picture of the whole system.