



CICLO DI SEMINARI

Mercoledì 16 Settembre 2015

Sala riunioni terzo piano - ore 11:00

PREDICTIVE HABITAT MODELING OF COLD-WATER CORAL DISTRIBUTION IN TWO MEDITERRANEAN CANYONS AND IN SANTA MARIA DI LEUCA AREA

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Cold-water corals (CWC) ecosystems are especially vulnerable and suffer from many physical damages, particularly anthropogenic impacts from fishery activities, and have been identified as sensitive habitat. However, the Mediterranean CWC distribution is still incompletely known compared to the one in the Atlantic Ocean and factors controlling coral repartition are not entirely understood yet.

The objective of this study is to combine several parameters to describe the environmental conditions in favor of Mediterranean CWC settlement: (1) *Madrepora oculata* observations, extracted from georeferenced underwater video films, (2) eco-geographic variables derived from high resolution bathymetry, (3) backscattering from the multibeam echo sounder RESON (7150) and (4) hydrodynamic data. Habitat suitability models have been used to identify the main eco-geographical variables explaining CWC distribution. Presence-only models (MaxEnt and ENFA) and presence-absence model (GLMs) have been used and compared. The study has been processed on 3 different deep-sea sites, the Cassidaigne Canyon, the Bari Canyon, and the Santa Maria di Leuca coral province.

The three models pointed out roughness, water density and maximum current to be the main explaining factors for CWC distribution. These results have been used to produce habitat suitability maps. These theoretical distributions compared to the actual distribution should allow the identification of an eventual anthropogenic pressure responsible for the habitat decrease (fishing, global change, silting, etc.).

