www.elsevier.com/locate/csr

Coralligenous morphotypes on subhorizontal substrate: a new categorization

Valentina A. Bracchi, Alessandra Savini, Daniela Basso, Fabio Marchese, Cesare Corselli

PII: S0278-4343(16)30614-8
DOI: http://dx.doi.org/10.1016/j.csr.2017.06.005
Reference: CSR3609

To appear in: *Continental Shelf Research*

Received date: 18 November 2016
Revised date: 8 June 2017
Accepted date: 9 June 2017

Cite this article as: Valentina A. Bracchi, Alessandra Savini, Daniela Basso, Fabio Marchese and Cesare Corselli, Coralligenous morphotypes o subhorizontal substrate: a new categorization, *Continental Shelf Research* http://dx.doi.org/10.1016/j.csr.2017.06.005

Coralligenous morphotypes on subhorizontal substrate: a new categorization

Valentina A. BRACCHI[1,2]*, Alessandra SAVINI[1,2], Daniela BASSO[1,2], Fabio MARCHESE[1,2], Cesare CORSELLI[1,2]

[1] University of Milano-Bicocca, Department of Earth and Environmental Sciences Piazza della Scienza 4, 20126 Milano, Italy.

[2] CoNISMa, Local Reasearch Unit of Milano-Bicocca, Piazza della Scienza 4, 20126 Milano, Italy.

*Corresponding author: valentina.bracchi@unimib.it

Abstract
Coralligenous has a relevant role in submarine landscape formation and demise through geological times, producing various morphotypes on the seafloor. Several terms are used to define coralligenous morphotypes, but their application through different geological and environmental settings still remains inconsistent. Through a systematic analysis of seafloor acoustic remote data (multibeam, side scan sonar and subbottom profiler) along Apulia continental shelf, ground-truthed by video observations and direct sampling, we detected a number of coralligenous morpho-acoustic facies as 0.2 up to 4 m topographic reliefs with steep flanks and a rigid inhomogeneous biogenic framework, characterized by medium to strong SSS backscatter and a variable plan-view geometry. The observed pattern led to the identification of coralligenous meso- and macrohabitat in which the biogenic frameworks (i.e. coralligenous) prevail as sole biocommunity on the seafloor or are associated with other type of habitats: (i) coralligenous *sensu stricto*, (ii) coralligenous and detritic bottom, (iii) coralligenous and muddy bottom, (iv) coralligenous and *Posidonia* meadow. Finally we improve the geomorphological definition of bank, proposing this new descriptive rigorous categorization for coralligenous morphotypes on sub-horizontal substrate: 1) tabular bank, 2) discrete relief, and 3) hybrid bank.

Keywords
coralligenous; morphotypes; submarine geomorphology; remote sensing; seascape; Mediterranean Sea.

1. Introduction
In the framework of Mediterranean marine benthic zonation, coralligenous (C) is a biocenotic complex generating a new solid substrate, mainly produced by the accumulation of calcareous encrusting algae growing in dim light conditions, and consisting of tridimensional biogenic build-ups (Laborel, 1961; Pérès and Picard, 1964; Bellan-Santini et al., 1994; Bressan et al., 2001; Ballesteros, 2006; Piazzi et al., 2012). As other benthic bio-constructions, it contributes to seascape formation through geological times, causing geomorphological changes of the seafloor. In the Mediterranean Sea, it represents the most monumental bioconstruction along the shelf, where it forms large structures that may be up to 4 m high and greater than 50 m in