

Current Status of Zoobenthic Communities Associated with Deep Circalittoral Habitats from the Romanian Continental Shelf

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Abstract. *The European environmental policies related to marine water management require periodic environmental status assessments. Particularly, the Marine Strategy Framework Directive 2008/56/EC, clearly specifies that assessment must take into consideration benthic habitat types, including their associated biological communities. The aim of this study is to present the results from the ecological analysis of macrobenthic fauna from deep circalittoral habitats with mixed and mud sediments dominated by *Modiolula phaseolina* and *Terebellides stroemii* and to provide new information on the current structure and distribution of communities. The analyzed data covers the period 2021-2022 based on the processing of 56 samples on depths ranging between 60 m to 130 m. A total of 70 macrozoobenthic species were found in the assemblages, of which Polychaeta group had the highest number of species and individuals, mostly *T. stroemii* and *Aonides paucibranchiata*. For data interpretation, a synecological analysis was performed allowing the identification of the species with the most significant contribution to the ecosystem in terms of function, energy exchanges with the environment, the species characteristic of a biotope or those that have an accidental presence in the studied area. Also, the present ecological status of deep circalittoral habitats was assessed using the M-AMBI*(n) index, which was proposed as one of the indicators for assessing the good environmental status of marine habitats in Romanian marine waters.*

Keywords: MSFD, good environmental status, deep circalittoral habitats, *Modiolula phaseolina*, *Terebellides stroemii* communities

DOI [10.56082/annalsarscibio.2023.2.13](https://doi.org/10.56082/annalsarscibio.2023.2.13)

Introduction

In accordance with the requirements of the Marine Strategy Framework Directive 2008/56/EC through Decision 848/2017, in the Romanian marine waters, broad habitat types were evaluated, among them, deep circalittoral habitats with mixed and mud sediments.[9].