EVALUATION OF THE WATER QUALITY IN CLOSED MARINE BASINS USING ECOSYSTEM ENGINEERS

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The subject of the present study is the determination of a new index for the evaluation of water quality in closed marine basins, applied both in hard and soft substratum and based on the exergy of ecosystem engineering organisms. The study area is Thermaikos gulf, which has attracted scientific interest due to its considerable ecological, financial, political and social significance. As a result, there is a plethora of row data for this area. The exergy index was applied on such data, after the organisms were classified in categories according to their ecosystem engineering properties and activities. The use of the exergy index revealed that benthic communities of Thermaikos Gulf were not disturbed (high or good water quality) at the 59% of the stations examined, and disturbed (moderate, poor or bad water quality) at the 41% of them. The proposed index was checked by comparing its results with those of other indices, such as AMBI, BENTIX, BOPA, P/A, and of ABC curves. A considerable advantage of the new index is that it can be used for a rapid and low cost assessment of water quality in areas that also include hard substrata.

Keywords: exergy, pollution, benthic community, hard substratum.