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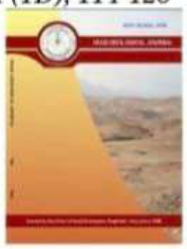

A Study of Fauna Assemblages and Their Relation to the Sediment Accumulation in the Coral Reef Area, NW of the Arabian Gulf

Zainab A. Al-Humaidan[1], Nada S. Al-Zlemat[2], Usama Q. Khaleefah[2] and Lamees S. Al-Qurnawy[1]

[1] Department of Sediments, Marine Sciences Center, University of Basrah, Basrah, Iraq
[2] Department of Applied, Marine Sciences Collage, University of Basrah, Basrah, Iraq
* Correspondence: alwhaely72@gmail.com

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Abstract

The discovery of coral reefs in Iraqi marine waters is a new event in 2012 and it covers an area of approximately 28 km^2 at the southern end of Khor Al-Amia. A team of divers from the German Freiburg Institute for Mining and Technology and Marine Science Center at the University of Basra were able to find coral reefs in the NW part of the Arabian Gulf. The aim of this article is to study fauna assemblages and try to understand the relationship between the accumulation of sediments and fauna assemblages in the Coral Reef area NW of the Arabian Gulf, southern of Iraq. Four surface samples of sediments of the area were studied and determined the relationship between the types of texture and the amount of fauna and shell fragments. Mollusca was chosen from among the existing groups of fauna due to the great number of species and large sizes, also Bryozoa studied in the region. The sand texture is predominant in the sediments of the area and the sand ratio was between 55-97% most of their grains are fine and round. The sediments of the region were distinguished by a high percentage of shells between 24–69% from the total percentage of sand. The phenomenon of multiple colors of sand and fauna revealed this due to the presence of minerals and oxides, impurities and pollution in the region, and genetic factors concerning fauna. Many species were diagnosed in the sediments of the region, reaching 62 species of Mollusca and Bryozoa. Mollusca is classified into three types (Gastropod, Pelecypoda and Scaphopoda). Some species were recorded for the first time in the region such as Japonactaeonpusillus, Cylichna cylindracea and Cuna majeeda.

Keywords: Fauna; Marine sediments; Coral reef; Palinurus; shells; Arabian Gulf

1. Introduction

Coral reefs are distributed within an area of 28 km^2, and the area is characterized by different depths compared to neighboring areas, where the depth ranges (7-20m) (Pohel et al. 2014). Palinurus shoal is considered Coral reefs area and one of the shallow sites in Iraqi marine waters and defined as underwater structures. The shallow depths represent semi-underwater islands confined within the great depths of the Khor, they appear as an anomaly within the Khor, which are impermeable morphological structures that found in shallow marine environments, it forms a strip of 58 km from the northern coast of the Arabian Gulf (Goudie, 2006). Coral reefs are among the greatest keys to unlock our understandings of a marine ecosystem (Perkol-Fenkel and Banayahu, 2007). Coral reefs of the Arabian Gulf and Oman Sea are serious habitats of cultural, socio-economic, and scientific importance. Coral reefs are defined as underwater structures made of calcium carbonate that is excreted by corals, they are formed from chemically unstable minerals, namely argonite and calcite, which can subsequently subjected to various chemical changes (Selley, 1982). The results of Sub Bottom Profiler (SBP) show

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