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Zooplankton Biomass and Density Using Two Mesh Sizes in Khor Al-Zubair, Iraq

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ABSTRACT

The study was conducted in Khor Al-Zubair in the northwest of the Arabian Gulf within the Basra Governorate, over a six-month period from January to June 2024. Three sampling stations were selected for the study. The first station is near the mangrove nursery at coordinates (30° 19' 20.2" N, 47° 49' 02.6" E). The second station is positioned near the command of the Iraqi naval force at (30° 13' 08.9" N, 47° 51' 54.0" E), while the third station is situated near the Free Zone at (30° 09' 10.2" N, 47° 54' 09.5" E). Zooplankton samples were collected using two types of Hydro-Bios plankton nets: one with a mesh size of 50µm and a nozzle diameter of 30cm, and another with a mesh size of 100µm and a nozzle diameter of 40cm. To calculate zooplankton density, expressed as individuals per liter (ind/L), results for the 50µm net showed a density of 0.2319ind/ L at the first station, 0.0374ind/ L at the second station, and 0.0179ind/ L at the third station. For the 100µm net, the density was 4.0982ind/ L at the first station, 3.2601ind/ L at the second station, and 1.9293ind/ L at the third station. The biomass of zooplankton was evaluated through several approaches, including wet weight, dry weight, displacement volume, and standing stock. In addition, environmental parameters such as water temperature, salinity, and dissolved oxygen were measured to assess their potential influence on zooplankton abundance and distribution.

INTRODUCTION

Lagoons, estuaries, bays, and fjords are among the most important coastal ecosystems due to their high productivity **(Bizsel *et al.*, 2001)**. The environment of creeks is characterized by significant changes and fluctuations in hydrological factors. As a result, organisms inhabiting these areas face considerable environmental variations and physiological stress, leading to reduced biodiversity despite the high productivity **(Khalaf, 2008)**.

The plankton community consists of organisms that either spend their entire life freely drifting in the water, known as holoplankton, or only part of their life in this state, known as