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## MACROZOOBENTHOS DIVERSITY AND THEIR DISTRIBUTION IN PANAMA LAGOON, SRI LANKA

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### ABSTRACT

Benthic communities consist of structurally, anatomically, and functionally diverse organisms including phytobenthos and zoobenthos of different levels of food web. The composition of benthic communities depend on structure of benthic bioclimatic region, specific habitats in which the organism live, sediment texture, physical and chemical properties of water column and sediments. This study aims to investigate diversity and distribution of macrozoobenthic community in Panama lagoon. The Van Veen grabs (250 cm<sup>2</sup>) was used to collect benthos; 100 random sampling locations were selected and samples were wet sieved on – board through a sieve having mesh size of 0.5mm to separate the benthic fauna. Isolated fauna were immediately fixed using 4% formalin with Rose Bengal. Analyzed macrozoobenthic sample consisted of total 16 families, which included 20 species, Among them; 5 species of polychaetes, 1 species of gastropods, 3 species of bivalves and 11 species of crustaceans were recorded under the following orders; 8 decapods, 3 species Amphipods. Shannon's diversity index value (H') found to be higher (1.7490) during North East monsoon, whereas during South West monsoon it was recorded as 1.5607. The dominance value was found higher at SW monsoon (0.3672) and lower at NE monsoon period as 0.2548. Species richness values revealed that it has high value in NE monsoon period (1.9894) than SW monsoon period (1.8209). Evenness J was higher in NE monsoon (0.7038) period followed by SE monsoon (0.6085). Crustaceans were recorded as dominant species; accounting more than 50% relative abundance. During the North east and south west monsoon period polychaeta contribution was 21% and 35% respectively. Amphipoda were recorded higher values in shallow areas; which places had high production potential of shrimps. The mollusc abundance was less during the south west monsoon period; the reduction of diversity reveals that, mixing may not enough since sand bar formed across the lagoon mouth; which has limited the mixing with ocean.

**Keywords:** Macrozoobenthose, abundance, Shannon's diversity index, species richness, Evenness