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ANALYSIS OF THE BENTHIC MACROFAUNA VERTICAL DISTRIBUTION FROM SHALLOW-WATER SEDIMENTS AT ADMIRALTY BAY, KING GEORGE ISLAND, ANTARCTICA

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Brazil has intensified its biological research work in Antarctica since 1982, and until 2002 the benthic fauna had been collected mainly with van Veen, traps, nets, dredges and corers through scuba diving. Aiming at the management and implementation of a strategy for environmental monitoring near shore close to the Brazilian Antarctic Research Station "Comandante Ferraz", a Mini Box-corer (0.0625 m^2 sampling area and 55kg) has been used for remote sampling of soft sediment and macrofauna. In the 2004 Austral summer, samples were taken from two transects in the Admiralty Bay, King George Island, north of Antarctic Peninsula: near the Brazilian Antarctic Station (Martel Inlet) and near the Peruvian Antarctic Station (Mackellar Inlet). Three replicates were taken from 20, 30 and 60m depth in each area. Four sub samples (0.7L each) were extracted from each replicate and stratified from surface downwards (0-2, 2-4, 4-6, 6-8 e 8-10cm depth) for grain size distribution, total organic matter content, faunal composition and faunal vertical distribution within the sediment analysis. Amphipoda, Cumacea, Polychaeta, Oligochaeta, Bivalvia and Gastropoda were considered for the vertical distribution analysis. The total densities of organisms in the two study areas were similar, but there was higher density of Oligochaeta in Martel Inlet, and of Cumacea in Mackellar Inlet, at 20m. In general, macrofauna were concentrated in the 0-4cm layer (64% of total organisms). There was not significant difference in Oligochaeta density between the five sediment layers. The correlations between grain size distribution and content of total organic matter, and the faunal densities did not explain the pattern of faunal concentration in the layer 0-4cm, neither the different composition between the areas at 20m. Other factors such as dissolved oxygen and organic carbon concentration may contribute to this distribution pattern, and also, a more refined identification at family and species level may reveal differences in the vertical distribution.