PRESENCE AND DISTRIBUTION OF SOME PERSISTENT TOXIC SUBSTANCES IN SEDIMENTS AND MARINE ORGANISMS OF POTTER COVE, ANTARCTICA

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Human activities in Antarctica have shown a significant increase in the last decades. These activities are sources of water and soil pollution, leading to the accumulation of organic and inorganic pollutants with diverse deleterious effect on the natural biota and humans. In this study the presence and distribution of butyltin compounds, polychlorinated byphenyls (PCBs) and heavy metals in surface sediment and biota from Potter Cove coastal environment were analyzed. Specimens of three resident species having different feeding strategies (Notothenia coriiceps, Laternula elliptica and Nacella concinna), were selected as biological models. This work was focused to cover the existing gap in the pollution knowledge in Potter Cove, where an active scientific station and intense polar vessels traffic occurs since 1952. PCBs were under the detection limit in all samples. Butyltin compounds only were detected in a restricted area near Jubany Station and seem to be related to the abrasion of antifouling paints from the icebreakers. Cr, Cu, Mn, Pb and Zn had a similar behavior into the cove, probably because they are regulated by similar process and conditions. However, Pb in some sites of the cove seems to be related to human activities in the area. Cd was relatively low, with the highest values close the shoreline, probably influenced by the seasonal streams draining waters from Potter Peninsula. Results showed that, despite Jubany station had been operating for more than 50 years; surface sediment and biota from Potter Cove do not exhibit levels of pollutants that could represent an environmental concern.