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# Plastic Debris on the Shores of Two Antarctic Lakes

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## Abstract

In recent years, plastic pollution has become a major global concern. Plastic debris has been found in all environmental compartments, even in remote areas such as Antarctica. Within Antarctica, their presence has already been reported in marine waters and sediments, sea ice, local organisms, freshwater, soil, glaciers, beaches, and recently, it's atmosphere. However, there is little evidence of the occurrence of plastic debris in Antarctic freshwater. Here, we investigated the presence of plastic debris on the shores of two Antarctic lakes (Lake Profound/Uruguay and Lake Deep/Ionosférico) located in the northeast of Fildes Peninsula (King George Island, Antarctica). Plastic debris was collected on the shores of both lakes. Afterwards, it was characterized, identified and quantified. The results showed a predominance of mesoplastics, with expanded polystyrene (EPS) (69.52%) and polyurethane (PUR) (14.37%) being the predominant polymer types, with other polymer types such as polyethylene (PE) and polypropylene (PP) being minority (3.49% and 2.33%, respectively). Taken together, these results suggest that plastic debris contamination has reached Antarctic freshwater. *Acknowledgments:* this research was funded by the Ministerio de Ciencia e Innovación (PID2020-113769RB-C22). We would like to express our gratitude to Instituto Antártico Uruguay and particularly the BCAA staff of the XXXV Uruguayan Antarctic expedition (2019-2020). Miguel González-Pleiter thanks the Carolina Foundation for the award of a postdoctoral grant (SEGIB). Franco Teixeira-de-Mello, Gissell Lacerot and Juan Pablo-Lozoya specially thank the SNI and PEDECIBA for support.

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