
Distribution and identification of possible sources of plastic pellets for the island of Santa Catarina

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Abstract

Among the different classes of plastics found in the marine environment, pellets stand out due to their wide dispersion and occurrence. Santa Catarina Island is a coastal island located in southern Brazil, which has no plastic industries and no port system, however, high amounts of pellets have been reported on its various sandy beaches. Therefore, the objective of this study is to evaluate the possible sources of plastic pellets for the region of Santa Catarina Island. The hypothesis is that the pellets are lost during handling and transport in adjacent harbors, mainly from Itajaí Harbor; the second largest port in terms of handling plastic pellets. Numerical models have proved to be an excellent tool that allows mapping the trajectory of plastic particles in the ocean and better understanding their distribution. Here, we used OceanParcels to study pellets distribution in the region comparing winter and summer. The results of this study will allow us to understand the dynamics of pellet distribution in the central region of Santa Catarina State and identify potential sources as well as accumulation regions.

Keywords: Microplastics, Numerical Modeling. Port systems.

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