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Investigating Abundance, Distribution and Accumulation of Plastic Resin Pellets and Fragments in the Caspian Sea: A Case Study of Noor Shores

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Abstract

This study was an attempt to investigate abundance, distribution and accumulation of plastic resin pellets and fragments in the Caspian Sea on the basis of color, size and shape. Therefore, using National Oceanographic and Atmospheric Association (NOAA) method, the plastic debris samples were collected from two separate stations with eighteen quadrats and in a range of two kilometers. The results of study showed that microplastics (whose size is less than 5 millimeter) were more abundant than meso and macro plastics. Also, it was found that plastic resin pellets (N=4263) were the most frequent microplastics. In addition, color analysis of the samples showed that white resin pellets and fragments have the highest frequency. In sum, it was found that plastic debris and fragment are widely and unevenly distributed along shore lines of the Caspian Sea. It seems that this phenomenon is the result of some factors such as characteristics of the Caspian Sea, climate change, vicinity to land mass and land sources, marine activities, geomorphology of the region and physical factors such as shape, size and density of debris rather than human activities.

Keywords: *Plastic debris, Resin pellet, Fragment, Caspian Sea.*