عنوان مقاله:

Research Article : Microplastic pollution in two zooplankton groups on the southern coast of the Caspian Sea

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خلاصه مقاله:

The high volume of plastic waste, especially microplastics (MPs), has caused a global concern in the last decades. The present study aims to investigate the presence of MPs in two zooplankton groups in the southwest of the Caspian Sea due to the importance of zooplankton populations in the bottom levels of the marine food pyramid and the probability of their transfer to the human food chain. The samples were collected from four stations over one year (۲۰۲۰-۲۰۲۱) using ۱۰۰ µm plankton nets. After separation and assessment of MP particles, fragments and fibers were the predominant forms of MPs. Analysis of ۵۱۲۳ Acartia tonsa and ۱۵۲۸ Pleopis polyphemoides, resulted in ۳۸ (۲۲ fragments and ۱۶ fibers) and ۲۸ (۱۵ fragments and ۱۱ fibers) MPs, respectively, and ۴۲ MPs (۲۴ fragments and ۱۷ fibers) in the seawater. The average size of the ingested pieces in the zooplankton communities was in the range of ۳۵-۴۶.۵ µm and ۵۶.۲۵ µm in the seawater in four stations. The most commonly observed colors in A. tonsa were orange and white, and black in P. polyphemoides and seawater. The samples were also inspected using FTIR-ATR method and confirmed the presence of polymeric compounds and the probable types of polyester, polyethylene, and polyethylene terephthalate in the zooplankton and seawater samples at all stations. Since seafood is an important source of .nutrients in coastal areas, the polymers present in the zooplankton's bodies can transfer to higher trophic levels, including humans

کلمات کلیدی:

Caspian Sea, Microplastics, Zooplankton, FTIR, Polymer

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