Investigation of spatiotemporal variability of microplastics in Qatar's coastal environment

Radhouane Ben Hamadou*, Oyebamiji A. Abayomi, Pedro Range, Mohammad S. Alghouti, Jeff P. Obbard, Saeed H. Almeer

Microplastics have recently been reported in the most pristine region of the world's oceans. Microplastics are easily mistaken for food by filter-feeders and planktivorous fish, and can also adsorb large quantities of recalcitrant organic pollutants (OPs) which biomagnify up the marine food web, hence, explains the need for their investigation. In this study, the spatial and temporal distribution of microplastics were investigated for the first time in Qatar, both in sediments and seawater. Eight beaches across Qatar and four sea surface stations were surveyed between the months of December 2014 and March 2015. Microplastics were discovered in all samples and their abundance varied both in intertidal sandy beaches and sea surface. Two-factor ANOVA revealed that the spatial variability of microplastics in sea surface stations was statistically significant however, there was no observable temporal variability. The average concentration of microplastics in all 8 beaches was not significantly different. Results from the present study indicate the pervasiveness of microplastics in Qatar’s coastal environment.