

Microplastics in marine sediments; examples from the Japan Trench and the Japan Sea

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Microplastics have become widely dispersed throughout the marine environment in and around Japan since the 1960s, which correspond to the onset of mass plastic production and use in this country. We demonstrate two examples on microplastic study in sediments.

One is from the Japan Trench. Kawamura et al. (2019; GS London) documents a possible abrupt microplastics depositional event in continental shelf and deep-sea environments triggered by a tsunami. The sediment layers contaminated by microplastics correspond with sedimentary horizons where ¹³⁷Cs signals were measured, indicating deposition after 1960s nuclear tests. The microplastics were observed in the 2011 Tohoku-Oki tsunami deposits. Tsunamis can thus potentially contribute to the wide dispersal of microplastics from coastal to deep-sea areas, and these anthropogenic particles can be used to date very recent turbidite deposits.

The other is from the Japan Sea. Microplastics in marine sediments along the coastal regions were observed. These distribution patterns should be explained not by diffusion into water column, but by sedimentological processes.

Keywords: Japan Trench, 2011 Tsunami, Japan Sea