During the past few years and especially in 2014, plastic pollution has gained a lot of media attention and public awareness is rising. Management plans and policies start to adopt strategies for mitigating effects and reducing entry of marine litter and beached plastic. Strangled seals or plastic ingesting seabirds are perceived easily by the broad public through emotionally charged photographs and personal experiences on beaches all around the globe. Monitoring programs, beach clean-ups, source elimination, and societal changes such as local bans of single-use plastic bags or outphasing of microbeads in personal care products are being talked of frequently. All together, this increases the acceptance of allocation of public resources on environmental programs. In contrast it is hard to draw someones attention to possible effects of microplastics on community structures of organisms on the bottom of the food web, whose existence and importance we are rarely aware of. There are chances for severe impacts in plastic accumulating ocean gyres which are of oligotrophic nature and consequently low food availability. So far the concentrations, biological impact and the fate of disintegrating plastics in the marine environment are still not enough understood, especially with perspective on the ecosystem as a whole. Zooplankton, free-floating animals that often live of single-celled algae, form the link between primary production and higher trophic level organisms, including commercially important fish species and therefore human food resources. Microplastic, either as degradation product from plastic litter or directly introduced as microfibres, microbeads or plastic resin pellets, have been found by many studies down to sizes of a few micrometres, which is in the food size range of most zooplankter. The physical and chemical harm from ingestion can not be quantified yet, and also data on distribution of particles smaller than 300 μm is sparse. The handling and analysis of those small microplastics is still difficult and no working standard methods are in place. Here we show our ongoing work on a sample set from a cross Atlantic transect to estimate the concentration of microplastic from 10 μm and larger based on visual identification supported by Raman microspectrometry.

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