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# Microplastic detectives search for microplastic pollution along the German coastline

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## Abstract

The aim of the project called Mikroplastikdetektive (‘microplastic detectives’) is the large-scale survey of micro- and mesoplastics (1 mm - 25 mm) along the German coasts by citizen scientists. The first step of this citizen science research project was to build up a network of citizen scientists. The following categories of people participated: people employed by or volunteering for environmental and other non-governmental organizations, pupils and students, and a few scientists and unaffiliated citizens. In total, more than 200 citizen scientists collected sand samples from about 50 locations along the German coastline of the North Sea and the Baltic Sea. All participants used the same methodology whereby a randomly placed grid determined 20 locations on a beach, with each location providing one sand sample. Sand samples were then dried and sieved down to 1 mm in the laboratory. Suspected plastic particles were determined by visual examination and density separation. All suspected particles were tested with FTIR spectroscopy to determine if they consisted of plastic polymers. Results indicate widespread pollution with meso- and microplastics along the German coastline, with considerable spatial variation.

**Keywords:** plastic pollution, North Sea, Baltic Sea, citizen science, microplastics, mesoplastics

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