

Microplastics in Personal Care Products and the Potential for Sampling Bias

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Microplastics from Personal Care Products - Bias of “typical microbeads”

One source of microplastics (< 5mm) in the aquatic environment are Personal Care Products (PCP) such as shower gel, face scrubs and toothpaste.

As part of our public engagement work (see right)

we extracted microplastics from PCP. Many products

contain several shapes of microplastics, with the well known “beads” visible by the naked eye. However, the majority of microplastics appeared as irregular-shaped white-transparent particles which, in environmental samples, could be confused with naturally occurring mineral substrates. As environmental sampling for microplastics relies on a visual selection step in which microplastics are picked for further analysis, this represents a large potential for bias and underrepresentation of microplastic prevalence.



Total amount of microplastics extracted from whole tubes of face scrub.



Transparent-white microplastics from face scrub product.

Research and Development in Scotland

Research in microplastics in Scotland is coordinated by the Scottish Microplastic Research Group (SMRG), a community group under the Marine Alliance for Science and Technology Scotland (MASTS). It covers activities in all media. The SMRG also aims for common, comparable methodology and criteria for reporting results (e.g. size class boundaries).

Reliable and comparable evidence of microplastic distribution and concentrations will be fundamental to the assessment of environmental harm and regulatory actions.

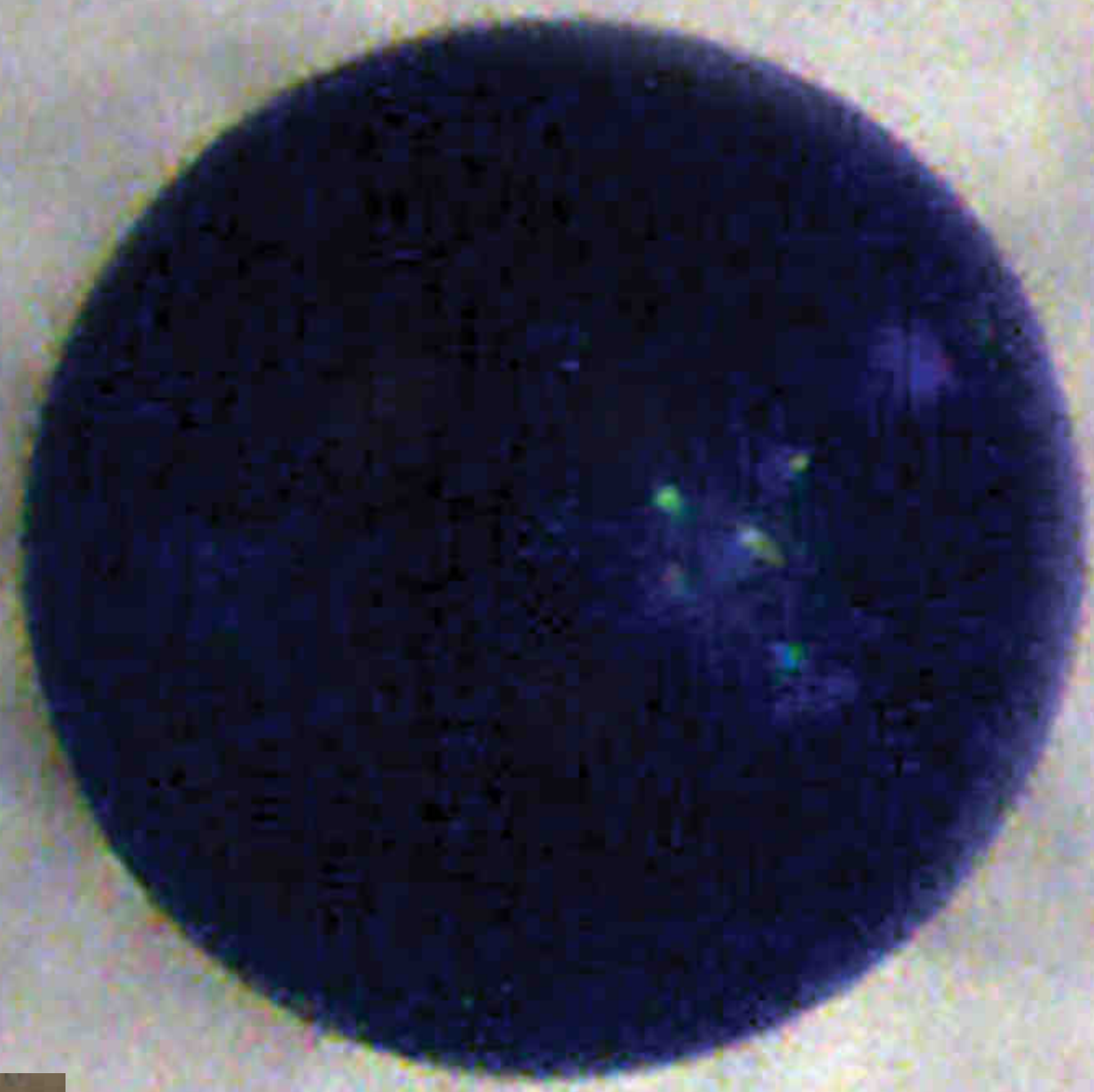


Gobiid larva with an exfoliating bead stuck in its gills (Forth Estuary, Scotland)

Public Engagement

Engaging the public and informing consumers can act in parallel with direct regulatory actions. We developed a simple, child-friendly experiment as part of our

“Environmental Detectives” series. After trialling with children of different ages from a local school, we took the experiment to the Edinburgh International Science Festival. Feedback after the weekend was very positive from both the children and the parents, many who declared to take microplastics into consideration in future purchases.



100 um

“Typical” round and intensively coloured microbead



Microplastic experiment at the Edinburgh International Science Festival 2016



Microplastic beach sampling workshop by the Scottish Microplastic Research Group.