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Published 21/05/2018

The pollution of the marine environment from macro-plastic litter has risen rapidly in the political agenda and in the public consciousness in the past few years. The much-celebrated TV series, Blue Planet II, has acted as a catalyst moment for ocean plastic prevention, leading to various campaigns from NGOs and the media¹. This has culminated in several UK government announcements targeting the “scourge” of plastic pollution, most notably with the publication of the ‘25 Year Environment Plan’; alongside a growing number of commitments from business².

A less visible, but arguably more concerning, source of aquatic plastic pollution are microplastics – tiny particles of plastic less than 5mm in diameter or length. Regulatory action in the UK has already been seen in this area, with the January 2018 ban on plastic microbeads in cosmetics and personal care products³. However, there is a body of growing research which argues that this is a drop in the ocean compared to the potential impacts that microfibres might have on marine life and even human health⁴.

This raises the question: With a global problem such as microfibre pollution, without it seems a single viable solution, what can – and indeed should – industry be doing about it?

What are microfibres?

Microfibres are a type of microplastic, that are threadlike and measure between 100µ – 5 mm in length⁵. A recent study published by the International Union for the Conservation of Nature (IUCN) estimated that synthetic fibres release is the source of more than third of total microplastic release into our oceans⁶.

¹ Such as: Greenpeace Coca Cola plastic campaign - <https://www.greenpeace.org.uk/what-we-do/oceans/coke/>; Sky Ocean Rescue - <https://skyoceanrescue.com/>; Evening Standard The Last Straw - <https://www.standard.co.uk/topic/the-last-straw>;

² Iceland own brand packaging to be plastic free by 2025; Evian to use 100% recycled material by 2025; Coke pledges to recycle all packaging by 2030

³ Department for Environment, Food & Rural Affairs. (2018). World-leading microbeads ban takes effect. UK Government.

⁴ Browne, M., Crump, P., Niven, S. J., Teuten, E., Tonkin, A., Galloway, T., Thompson, R. (2011). Accumulations of microplastic on shorelines worldwide: sources and sinks. Environ. Sci. Technol.

⁵ Miller, R. Z., Watts, A. J., Winslow, B. O., Galloway, T. S., & Barrows, A. P. (2017). Mountains to the sea: River study of plastic and non-plastic microfiber pollution in the northeast USA. Marine Pollution Bulletin, 124(1), 245-251.

⁶ Boucher, J. Friot, D. (2017). Primary Microplastics in the Oceans: A Global Evaluation of Sources. International Union for the Conservation of Nature.

Microfibres have been found in samples from headwater streams, rivers, soils, lakes, sediments, ocean water, the deep sea, wildlife, arctic sea ice, seafood, table salt and drinking water.

A European Commission's investigation into microfibre release generated from the washing of clothes in Europe estimated that potentially in excess of 120,000 tonnes of microfibres could be being released on an annual basis. Similar studies report that clothes release half a million tonnes of microfibres into the ocean each year – equivalent to more than 50 billion plastic bottles⁷ and representing a sum total 16 times more than that of microbead release.

Why are they a problem?

Current knowledge of the potential negative impacts of microfibres is expanding rapidly, with the number of academic journal publications focusing on the issue growing exponentially. It is argued that microfibres in marine and freshwater environments globally are likely of concern to both human health (through the introduction of microplastics in the food chain and possible bioaccumulation of toxins) and the health of marine life (through ingestion and inhibition of growth and reproductive processes). It is possible that growing awareness of microfibre pollution in aquatic environments may only be the start of our understanding of long-term associated ecological and human health problems.

How can business help tackle the problem?

With increasing scientific research on the harmful impacts of microfibres, growing media attention, and expanding government action, it is imperative that industry is seen to take the lead on identifying sensible and effective global solutions. This will ensure industry is able to develop solutions that are scalable globally, marketable and effective. With inaction, industry runs the risks of needing to react to potentially misguided legislation or campaigns.

The complexity of the microfibre issue spans land and sea; and implicates a wide range of stakeholders from a variety of industries. Consequently, solution-finding must also be multi-stakeholder, diverse and collaborative. A truly effective solution must incorporate the views of all stakeholders along the lifecycle of a microfibre; from petroleum extractors and synthetic fibre manufacturers, to garment manufacturers, retailers, consumers, white good manufacturers and the wastewater treatment industry.

⁷ <https://www.ellenmacarthurfoundation.org/publications/the-new-plastics-economy-rethinking-the-future-of-plastics-catalysing-action>