

Plastic Soup

Resolution Shortlist Briefing Notes

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Plastic Soup: keep microplastic fibres out of our oceans

Microplastic fibres are shed from synthetic clothing with every wash and are the main contributors to microplastic contamination of the oceans. The NFWI calls on Government and industry to research and develop innovative solutions to this problem in order to stop the accumulation of microplastic fibres in our oceans

Proposer's position.

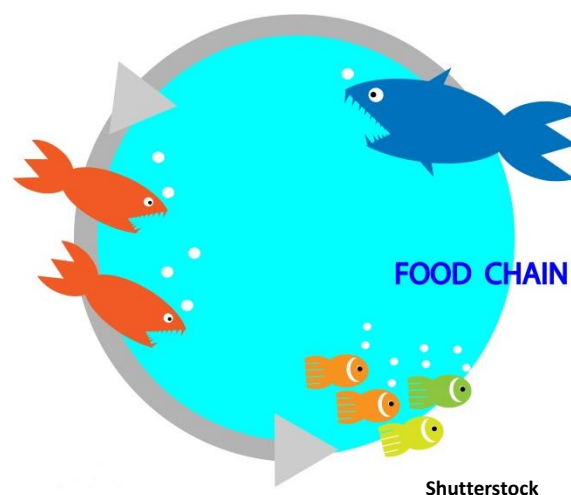
The proposer is concerned about the amount of microplastic fibres that are entering our oceans and the impact this has on aquatic life. With 85% of human-made material on the shoreline consisting of microplastic fibres, the proposer believes that the WI has an important role to play in raising awareness. She wishes to see the WI use its influence to encourage government to support and fund research and development into water treatment, textile production and recycling equipment and processes, as well as to persuade washing machine manufacturers to introduce filters to reduce the numbers of microplastic fibres entering the ocean.

What are microplastic fibres?

The National Oceanic and Atmospheric Administration defines microplastics as plastic fragments 5mm or smaller. Microplastic fibres are shed from synthetic and man-made clothes when laundered and end up in the sea and wider environment. A report by ecologist Mark Browne estimated that around 1,900 individual microfibrils can be rinsed off a single synthetic garment with around 85% of human-made materials found on the coastline consisting of microplastic fibres. A more recent study by Plymouth University showed that different synthetic materials shed different numbers of fibres. This varied from 140,000 fibres per washing machine load for polyester-cotton blend fabric, up to 730,000 fibres for acrylic. The same study found that the type of detergent used, and whether or not fabric conditioner was used, also had an impact on the number of fibres that were shed. The research into microplastic fibres, how they are released and where and how they accumulate is still in its relative infancy. In an inquiry into microplastic pollution, the parliamentary Environmental Audit Select Committee recognised this issue, and recommended that the government should seek to formulate a policy for researching and mitigating the impacts of microplastic fibres from an early stage.

Why are microfibres a problem?

Due to their small size microplastic fibres are readily ingested by aquatic life and, as they bioaccumulate through the food chain, they concentrate toxins in the bodies of larger animals. A recent study looking at fish sold in markets in California and Indonesia found that a quarter had plastic fibres and debris in their guts. Another study found microfibres in drinking water, beer, honey, sugar, and table salt. There is currently a lack of research into



how much of these particles and toxins end up in the human diet, and what impacts these will have on health. However the Environmental Investigation Agency state that there is a clear risk that they could pose a threat, with several NGO's recommending that a precautionary approach should be taken. Due to the ease of uptake by aquatic life, microplastic fibres are considered by many to be more harmful to ecosystems than larger plastic debris which ends up in our oceans (such as plastic bottles). Many point out the irony that plastic bottles, which are often recycled to make fleece jackets, end up in a form which is potentially more damaging to the environment.

Outdoor and leisure clothing companies use a range of synthetic materials to develop 'performance' clothing, and the emergence of the 'fast fashion' industry which delivers cheap

and plentiful synthetic clothing may also be contributing to the persistence of microfibres in the environment. Between 2009 and 2013, global consumption of synthetic clothing and textiles increased from 35.8 million tonnes to 55 million tonnes.

What can be done to prevent the problem?

Once in the marine environment, any attempt to remove microfibres would be time and labour intensive and extremely costly, therefore prevention is key. Fitting filters to waste water treatment plants is one means of filtering out microplastic fibres, however due to microfibres entering sewage sludge in the treatment process it is likely that this method of filtering would still result in microfibres in the wider environment. Due to the high cost of upgrading these plants, this may not be a realistic solution to tackling microfibre pollution in the short-term. However in its



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inquiry, the Environmental Audit Committee did recommend that the government and Environment Agency work with Water Companies to assess the viability of monitoring, and ultimately reducing, the number of microplastic emissions from waste water treatment plants.

Due to the cost and difficulty of upgrading water treatment plants, at source is generally considered to be the most effective way of reducing the number of microfibres entering the environment. Fitting filters to new washing machines and retrofitting filters to old washing machines is one option for tackling the problem, however a report funded by clothing company *Patagonia* emphasised the importance of disposing of the filtered fibres correctly to prevent them ending up in the wider environment post-filtration. Amsterdam based ocean conservation project Plastic Soup Foundation believe that better

quality clothing or fabrics coated with an anti-shed treatment could help. A 'nanoball' which could be used in the washing machine to attract and capture plastic could also be an option.



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The EU funded MERMAIDS project has received funding to investigate ways in which microfibre pollution can be reduced through the application of existing technologies. It includes looking at textile treatments and ways of washing fabrics which reduce the amount of microfibres shed.

Government approach.

In November the UK government responded to the Environmental Audit Committee inquiry. It stated that the Chief Medical Officer would review the health impacts of microplastics, and that it would publish a report on the potential harm of microplastics in the marine environment. Defra, the Environment Agency, water industry and academics are also looking at the role of waste water treatment in the release of microplastics into the environment. It is proposed that the water industry trial sampling for microplastics during 2017. The results of this investigation programme would feed into decisions about what to do next.

The government has also committed to banning micro**beads** – a type of microplastic commonly found in cosmetics and toiletries (but which are much less prevalent than microplastic fibres). This is a change in approach for the government which previously supported a voluntary phase out.

How could the WI work on this issue if it was passed?

A full campaign plan would be developed by the NFWI if the resolution is passed, taking into account developments since then. But to help inform your discussions, here are some ways the WI could consider working on this issue if it was passed.

At a national level the NFWI could work with environmental charities to bring what is currently a fairly niche issue into the mainstream. Better public and political awareness of the issue would provide a good foundation from which the NFWI could press government, industry and the Research Councils to set aside funding to research the problem and develop solutions. Calling for better filtration systems to be fitted to waste water treatment plants and incentives for consumers to invest in technology (where it exists) which reduces the problem could be longer term aims.

At regional and local levels Federations and WIs could use their collective consumer power to seek greater action on the issue from clothing and washing machine manufactures. They could emphasise the fact that, when made aware of the information and extent of the problem, consumers are willing and able to ensure that microfibres are tackled at source.

Arguments for the resolution.

- This resolution is in keeping with the WI's longstanding concern for sustainable marine environments and members' tradition of taking action on issues at consumer and household level.
- This is an issue which is not currently widely understood or publicised, and is one which the parliamentary Environmental Audit Committee has recommended decisive action as part of its investigation into microplastics. The WI could help bring attention to the issue and encourage the government and industry to make it a priority.



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Arguments against the resolution.

- The research into this area is still in its relative infancy – do we know enough about the issue to take action?
- This is a huge problem and would require input from a number of stakeholders, including consumer buy-in. It could also be very costly – is it achievable, and can the WI make a difference?

Further information

National and international organisations: (these contacts are for information only – they are not able to provide speakers):

- Marine Conservation Society: www.mcsuk.org/
- The MERMAIDS project: <http://life-mermaids.eu/en/>
- Plastic Soup Foundation: www.plasticsoupfoundation.org/en/

Video clips on the issue:

The Story of Stuff project has produced this video clip giving an overview of the microfibres problem: <http://storyofstuff.org/movies/story-of-microfibers/>

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