

Cynulliad Cenedlaethol Cymru | National Assembly for Wales

Y Pwyllgor Newid Hinsawdd, Amgylchedd a Materion Gwledig | Climate Change, Environment and Rural Affairs Committee

Ymchwiliad Microblastigau | Microplastic Inquiry

PL 04

Ymateb gan : Ffederasiwm Cenedlaethol Sefydliad y Merched

Evidence from : National Federation of Women's Institutes

1. Background

1.1 The National Federation of Women's Institutes is the largest voluntary women's membership organisation in the UK with over 220,000 members across England, Wales and the Islands. In Wales we have about 16,000 members belonging to 600 WIs. The WI is an educational, social, non-party political organisation, established to ensure that women are able to take an effective part in their community, make new friends, widen their horizons and together influence local, national and international affairs on issues that matter to them.

1.2 Since its inception, protection of the environment has been at the heart of the WI and has formed the basis of many WI campaigns beginning with a resolution passed in 1927 which saw WI members lobbying for action to protect the marine environment from oil pollution. Since then the WI has revisited this issue many times, working to improve inadequate sewage systems, tackle the dangers to marine life caused by litter, reduce excess packaging and an anti-litter campaign which led to the formation of Keep Britain Tidy. A 2005 resolution on protecting natural resources inspired a nationwide action day that saw WIs return excess packaging to supermarkets, encouraging retailers to reduce waste.

1.3 NFWI-Wales welcomes this inquiry into microplastic pollution. One of our current campaigns, End Plastic Soup, focuses on microplastic fibres and has been developed in response to a resolution passed by WI members in June 2017 with a 98.9% majority:-

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.

1.4 The intention of the resolution is to better understand the scale of the problem and the impact this is having not only on our marine life but also the potential effects of the fibres entering the food chain, and to push for the development of solutions.

1.5 As the problem of pollution from microplastic fibres is the current focus on our work on microplastic pollution, our response to the inquiry primarily concentrates on this issue. However, in line with our wider work on waste and pollution, the NFWI welcomes a focus on addressing pollution from other forms of microplastics, particularly those which are the most prevalent in the marine environment.

2. What are the main sources of microplastic pollution, including microfibres?

2.1 The NFWI is concerned about the release of microplastic fibres when synthetic clothes are laundered. The scale of the problem is large; millions of people wash their clothes every week, shedding these tiny particles that are too small to be caught by the machine's filters. These microfibers flow into the sewage system and eventually into the ocean, and due to their small sizes can be ingested by aquatic life. Studies have highlighted another way microplastics can be released into the environment, via bio solids created at wastewater centres; one study estimated that over 90% of microplastics are retained in sewage sludge which is then applied to farmland across Europe.ⁱ

2.2 Scientific research shows that plastic microbeads, found in cosmetic and personal care products, are polluting the oceans and causing long-term health risks for both aquatic life and people. NFWI-Wales welcomes the introduction of the ban on plastic microbeads which came into force in Wales in June this year banning the small pieces of plastic in rinse-off products.

3. To what extent are microplastics, including synthetic microfibers, a problem within Wales' aquatic environment? How does this impact on environmental and human health?

3.1 The NFWI is concerned about the impact microplastic fibres are having on aquatic life, and the sheer scale of this problem. With millions of people washing their clothes every week, there is a need for more research to understand the impact of these fibres in the marine environment, as evidence currently available is concerning. These fibres are readily ingested by marine animals; over 280 marine species have been found to ingest microplastics, including many with important roles in food chains.ⁱⁱ To give one example, a study found langoustines that are exposed to long term microplastic retention experience reduced nutrient availability, resulting in potential reduced population stability.ⁱⁱⁱ

3.2 More research is needed to understand the potential impacts of microplastics on humans. We know that microplastics are present in the seafood sold for human consumption^{iv} and a recent study found them in drinking water^v, meaning these fibres are also entering the food chain, but the long term effects are unknown. Recent research undertaken by the University of Hull and Brunel University London has found that people eating mussels in the UK are likely to have consumed microplastics and have called for more research to determine the implications of consuming the small amounts of microplastic.

3.3 In addition, there are suggestions that exceptionally small particles of microplastics could pass through the gut wall.^{vi} Numerous chemicals and dyes are applied to fabrics during the manufacturing process to provide specific functions^{vii}; again the impact of these being transported into the environment via microplastic fibres is unknown.

4. How comprehensive is our knowledge about the scale of microplastic pollution and its effects? What should the research priorities be?

4.1 There is limited research into the long term impacts microplastic fibres have on the environment and human health. We therefore believe there is an urgent need for more research to better understand the scale of the problem and its impacts, and to guide the development of the most effective solutions.

4.2 The NFWI has been calling on the Government to consider the issue of microplastic fibres when exploring new methods of reducing plastic waste and to undertake in-depth research into microplastic fibres, particularly their potential impact on marine life and ways in which fabrics can be designed so they are less polluting.

4.3 Before any legislation is implemented, research to quantify the issue and understand why different fabrics perform differently when washed, and the impact the type of fibre, fibre length and fabric construction have on fibre release is essential. We hope that this research would inform textile and clothing manufacturers about changes that can be made to reduce fibre release. The NFWI also hopes this would inform the development of new types of materials or textiles with a lower impact.

4.4 We were pleased to note that in May this year, the UK Government pledged £200,000 for scientists at Plymouth University to explore how tiny plastic particles from car tyres, fishing nets and synthetic materials enter our waterways and oceans, and the impact they have on marine life. The project is being led by Professor Richard Thompson, Head of the International Marine Litter Research Unit. However, the NFWI believes there is an urgent need to support industry's current work and explore the various potential solutions. The clothing industry works at slow pace - it can take up to 18 months to design one piece of clothing – if we don't act now it will have implications further down the line.

4.5 We welcome the commitment of the Welsh Government in addressing the amount of plastic entering our seas and would urge the Government to consider microplastic fibres in its plans for reducing plastic waste.

5. What is currently being done to minimise the release of microplastics into the environment? What more can be done, and by whom, to address this issue within Wales?

5.1 The NFWI recognises that there are a number of potential measures available to reduce the amount of microplastic fibres shed from clothing. However many of these are 'end of pipe' solutions. We believe that the onus should be on the polluter to recognise their role in polluting the environment and take steps to reduce the amount of waste emitted by tackling the pollution at the source.

5.2 The issue of microplastic fibres is complex and needs to involve a wide range of stakeholders, from the Government and clothing industry to the waste water treatment industry and washing machine manufacturers, in addressing the issue.

5.3 Leadership

5.3.1 NFWI-Wales would like to see all stakeholders - the Welsh Government, UK Government, the water industry, washing machine manufacturers, clothes producers and retailers in Wales - showing leadership in addressing microplastic pollution.

5.3.2 We welcome the Welsh Government's commitment to reduce plastic pollution in Wales and believe that measures such as the introduction of a bottle return scheme is a positive step in the right direction. We would like see the Welsh Government focus on the impact on the microfibre plastics on Wales' marine environment and to explore new methods of reducing plastic waste. We would like to see a commitment to in-depth research into microplastic fibres and measurement of the problem through sampling microplastic fibres in waste water treatment facilities to understand the scale of the issue.

5.3.3 We would also like to see the issue of microplastic fibres considered in the work of Natural Resources Wales.

5.4 Awareness raising

5.4.1 Awareness raising amongst consumers is an important step to ensure that they understand the potential impact their purchasing choices and behaviours have on the environment. The NFWI's End Plastic Soup Campaign is educating WI members and the wider public about the issue of microplastic fibres and action that can be taken to reduce the amount of microplastic fibres entering the ocean. Acting as agents of change, WI members are considering their own consumption and washing habits, encouraging others within their community to do the same.

5.4.2 A checklist leaflet has also been produced which highlights how changes to washing habits can help release fewer microplastic fibres when washing at home. An animation has also been produced to highlight the End Plastic Soup campaign and the small steps individuals can take to help reduce the impact of their clothes purchases on the environment.

5.4.3 We do however believe that awareness-raising campaigns alone are not sufficient to address the issue. Although many environmentally conscious consumers will want to take action, awareness/behaviour change campaigns are unlikely to reach everyone. Further, this measure would place the onus on the consumer to make changes that, we believe, require a more systematic approach in order to be successful.

5.4.4 The NFWI launched the End Plastic Soup survey at the end of April to help understand the scale of microplastic fibre release and the amount of synthetic clothing in our wardrobes. The survey received 1,400 responses and looked at the makeup of our wardrobes and washing habits to help build a clearer picture of the scale of the issue. The survey was broken up into three sections - the first examined the volume and type of clothing in our wardrobes, the second looked at washing habits and the third examined how we purchase and dispose of clothing. The findings of the survey will be available later this year.

5.5 Tackling pollution at source

5.5.1 The NFWI believe that addressing pollution from microplastic fibres should be done at source. Action should be taken by textile and clothing manufacturers and retailers of clothing products to prevent microplastic fibres being released into the environment in the first instance.

5.5.2 The NFWI recognises that there are a number of potential measures available to reduce the amount of microplastic fibres shed from clothing which include:

- Consumer products you put in the wash such as the Guppy Friend wash bag or the Cora Ball which claim to capture fibres. Both products have been good at raising awareness of the issue but place the responsibility onto the consumer. We also believe that more research is needed to understand how effective these are at tackling the problem.
- New washing machines to be fitted with filters. This measure again places the onus on the consumer to address the issue at home. It is also likely to require effective consumer education to ensure that the filter systems are emptied and the contents discarded correctly.
- Installing technologies to capture microfibrils at waste water treatment plants, however this could be extremely costly. We are keen to understand how effective existing water

treatment processes are in filtering out microfibres and the potential for monitoring fibres at the plant level to understand the scale of the problem.

- Requiring all clothing placed on the market to provide transparency about the expected fibre loss from particular garments. This would be welcome to ensure that consumers can make an informed decision about what to purchase.
- Creating a mandatory requirement for the reduction of microfibre release by clothing manufacturers.

5.5.3 Many of these are ‘end of pipe’ solutions. The NFWI believes that, in line with accepted waste management practice, **the onus should be on polluters** to recognise their role in polluting the environment and take steps to reduce the amount of waste emitted by tackling the pollution at the source.

5.5.4 This is why further research is needed to understand **why** different fabrics perform differently when washed, and the impact the type of fibre, fibre length and fabric construction have on fibre release. We hope that this research would inform textile and clothing manufacturers about changes that can be made to reduce fibre release. We also hope this would inform the development of new types of materials or textiles which have a lower impact.

5.6 Current developments

5.6.1 We note that there have been some positive developments taking place within industry. A cross industry agreement to prevent microplastic fibre release was launched in January and endorsed by the European Commission. The agreement includes The European Textile and Apparel Confederation, the International Association for Soaps, Detergents and Maintenance Products & the European Outdoor Group who will work together to tackle the issue.

5.6.2 In December 2017, the Outdoor Industry Microfibre Consortium^{viii} announced a programme of joint work on this issue. This group is made up of retailers including Marks and Spencer, Ikea, Next, Asos and various outdoor brands. The group announced that it would launch an infographic and roadmap to map out the interlinked parts of the microfibre challenge, and demonstrate the effect of raw materials and processes across the supply chain. The consortium is also supporting a research project, carried out by the University of Leeds, which will explore a pilot test methodology to provide an industry standard on microfibres. Following this, research will focus on building a picture of why microfibre shedding occurs and how production and use factors can influence this.

5.6.3 We are also aware of research projects being undertaken in the water industry looking at waste water treatment centres which examine what type of plastic and how much plastic ends up at plant level.

5.6.4 Collaborative work and joined up thinking is key to facilitating discussion on microplastic fibres and ensuring outputs are consistent. The NFWI is hosting a stakeholder roundtable on 30 October in Parliament as a chance for the different stakeholders to come together and discuss knowledge gaps to the issue and share upcoming work to ensure a collective approach is taken with developing solutions.

5.6.5 Collaborative work is essential to ensure that it is not just a few organisations taking action to minimise their impact. To achieve change, all concerned parties, including Government, need to work together and recognise their role in tackling the issue.

5.7 Reducing plastic waste

5.7.1 The wider impact of single use plastic waste on Wales' marine environment should be considered. Large plastics eventually break down in the sea producing tiny fragments of microplastics.

5.7.2 WI members are passionate about protecting the environment. Litter is a great concern with a number of WIs involved in litter-picking in their local communities as well as regular beach cleans. Annually, WI members get involved in the Show the Love campaign by making and sharing green hearts with the aim of starting conversations about climate change.

5.7.3 Fishguard WI has started a campaign called COUP (Cut Out Unnecessary Plastic) which involves members taking specific actions to reduce their use of plastic when shopping. The campaign also aims to raise awareness amongst the shops about the need to reduce plastic. When shopping, members take a jiffy bag, a selection of paper bags to put items such as bread and vegetables, and containers for meat/fish. Members buy milk in glass bottles and only buy unwrapped bread, vegetables and fruit. Members also try not to use cling film and have reverted to using greaseproof paper and tin foil to wrap sandwiches.

5.7.4 The public has a responsibility to consider the impact of their behaviours and should be encouraged to use their power, as consumers, to influence retailers to change their practices by demanding that they take action to eliminate their use of plastic packaging and introduce plastic-free sustainable alternatives.

5.7.5 Producers and retailers have a responsibility in reducing their use of single-use plastic and it is important that they lead by example. There is a need for producers and retailers to change their practices to support consumers to reduce their use of plastic and to minimise the use of throwaway plastic. It is encouraging to note that Iceland has committed to eliminating plastic packaging for all its own-brand products by 2023.

5.7.6 Public awareness campaigns can play a key role in influencing behaviours as evidenced by the Blue Planet II series. Hard-hitting advertisements have a role to play in changing consumer behaviours such as the campaigns being led by Welsh Water to target behavioural change through the Stop the Block campaign. The connections between marine litter and the experiences of individuals should be used, for example, the impact of litter on people's enjoyment of Wales' beaches.

5.7.7 It is positive to note the success of the plastic bag charge in changing consumer behaviour by resulting in a significant reduction in single use plastic bags.

5.7.8 An issue that has been highlighted by our members is the inconsistency across local authorities in Wales in terms of their recycling policies. To increase the recycling of plastic, we believe that a uniformed approach is needed across Wales. We note that the Welsh Government's proposal to invest £15m to help councils improve plastic recycling.

ⁱ Nizzetto L. et al (2016) Are agricultural soils dumps for microplastics of urban origin? *Environmental Science & Technology* 50 (20) pp 10777-10779

ⁱⁱ House of Commons Environmental Audit Committee *Environmental impact of microplastics* Fourth Report of Session 2016-17 <https://publications.parliament.uk/pa/cm201617/cmselect/cmenvaud/179/179.pdf>

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- ^{iv} Rochman M. C. et al (2015) Anthropogenic debris in seafood: Plastic debris and fibers from textiles in fish and bivalves sold for human consumption *Scientific Reports* 5 <https://www.nature.com/articles/srep14340>
- ^v <https://www.theguardian.com/environment/2017/sep/06/plastic-fibres-found-tap-water-around-world-study-reveals>
- ^{vi} House of Commons Environmental Audit Committee *Environmental impact of microplastics* Fourth Report of Session 2016-17 <https://publications.parliament.uk/pa/cm201617/cmselect/cmenvaud/179/179.pdf>
- ^{vii} Bruce N. et al (2016) Microfiber pollution and the apparel industry http://brenmicroplastics.weebly.com/uploads/5/1/7/0/51702815/bren-patagonia_final_report.pdf
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