

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
Ymateb gan : Just One Ocean
Evidence from : Just One Ocean

Introduction

Just One Ocean is a UK based non-profit organisation. The organisation has had significant experience over the last nine years looking onto the issues of plastic pollution. During 2017 – 2018 it has undertaken a citizen science research project assessing the impact of microplastics in the coastal environment, specifically the environmentally important area of Chichester Harbour. This location is a Ramsar site, SSSI, Special Area of Conservation (SAC) and Special Protection Area (SPA). However, as well as being ecologically critical, it is also an important location from a commercial perspective, providing the resources for farming, fishing and tourism. The research was predominantly undertaken using citizen science, volunteers gathered the data that was used in later analysis. In June 2018, in a collaborative programme (The Big Microplastic Survey) with the University of Portsmouth was launched globally. The aim is to provide information about the source, distribution, scale and categories of microplastics and mesoplastics in the visible range (1 mm – 25 mm) in coastlines on a global scale. To date, volunteers made up from individuals, organisations and government bodies from 21 nations have joined the programme. This includes a number of academic institutions around the world.

This submission is submitted based on the accumulated knowledge of microplastics, particularly in the ocean and coastal environments over the last nine years. Academic references have not been included to support that evidence in order to prevent the submission from becoming over complicated, but these can be provided if necessary.

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

There is ever increasing concern regarding the exponential increase in microplastic particles that are in our oceans and aquatic environments. These microplastics are providing a medium for the adsorption and concentration of persistent organic pollutants (POP) already present in the oceans as well as a mechanism for those toxins to enter the food chain. The vast majority of microplastics in terms of volume and weight are secondary microplastics and mesoplastics between 1mm and 25 mm. This range of plastics are of a size that is easily ingested by animals in the aquatic environment. Plastics have become pervasive, pernicious and persistent and Wales faces similar issues to the rest of the world. According to Plastics Europe, in 2016, global plastic production according to the industry was around 335 million tonnes, a figure that does not include fibres

being used in the textile industries. It is estimated that between 4.8 and 12.7 million tonnes of plastic could be entering the oceans annually as a result of mismanaged waste.

Plastic pollution has become a serious cause of mortality for seabirds and marine animals and is having a devastating impact on marine ecosystems and biodiversity. However, whilst there is an imperative to measure these environmental impacts, there is an equally urgent need to understand the social and economic implications of microplastic pollution. Plastic pollution not only has the potential to undermine the benefits of marine ecosystem services, but its impact on coastal communities and their economies can be significant.

The abundance and distribution of plastic waste can vary significantly from one region to another. The only real certainty is that the abundance and distribution of plastic debris and microplastics is linked to a whole range of anthropogenic and natural coastal processes. This lack of evidence and knowledge is something that was identified by GESAMP (2015) as Challenge One and this was also supported by our research. As such it will be extremely difficult for the Committee to be able to answer this first question. There is an urgent need to invest in data collection and analysis. However, there is also a corresponding lack of resources and scientist looking at this problem, a situation that we are seeking to address through the use of citizen science and The Big Microplastic Survey. Not only does it address the evidence issue (GESAMP Challenge One) but it also engages with local communities and increases awareness, leading to changes in perceptions and behaviour (GESAMP Challenge Three)

Microfibres make up the largest proportion of secondary microplastics in the environment and unfortunately, research into their scale and distribution requires more advanced scientific research techniques. The problem with microfibers and microplastics less than 1mm in size, is that they are difficult to see and this has its own issues.

Our research highlighted that there is very much a reactive rather than proactive approach to the microplastic issue and an underlying feeling that whilst it is a critical environmental issue, the socio-economic impact, at the moment, is not significant enough to bring about any real change. As such, the approach is likely to remain reactionary, particularly outside of locally focussed organisations and groups. This attitude very much seems to be the result of the 'invisibility' of microplastics. Once again part of the solution is an urgent need for more research and an increase in awareness.

Question Two - What are the main sources of microplastic pollution, including microfibres?

This question was answered to some extent in Question 1. Plastic pollution can be found on coastlines all around the world and whilst a significant source is related to fishing gear lost at sea, over 80% of marine plastic has originated from land based. This is mainly due to the discharge of waste water, poor waste management and the fragmentation of plastic from landfills. These are areas where there is potential to reduce leakage into the environment. There should not be a focus on microfibers. In the UK plastic getting into the environment from wear on car tyres is around 70,000 tonnes per year. A more holistic approach to the issue of microplastics needs to be undertaken.

Question 3 - How comprehensive is our knowledge about the scale of microplastic pollution and its effects? What should the research priorities be?

This question was also answered in the reply to Question One. In order to engage with local communities and gather the type of quantities of evidence that we need to identify feasible solutions they need to be involved. For that reason it is suggested that research projects that also incorporate citizen science programmes should be supported.

Question Four - 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?

See the reply to Question One. We do not have specific knowledge regarding what is being undertaken specifically in Wales. However, part of the solution has to be a cradle to cradle approach in the manufacturing process of plastic products. The other key issue is to not try and address this problem in a piecemeal fashion which seems to be the approach by the UK Government. Banning or raising levies on single use products that appear to be the flavour of the month, whilst potentially vote winning, is unlikely to resolve the issue.

We have identified six key factors that need to be included in a strategic approach to resolving the issue:

- Science – There is a need to invest in science in order to separate the truth from social media hype. Without science we cannot formulate policy.
- Education – This applies to schools, business, industry and the general public. It should involve a strategic plan to increase the levels of awareness and change perceptions and behaviour.
- Innovation – The solutions are not based on doing the same thing using different materials, many of which do not have management process in place. Innovation requires investment and support.
- Alternatives – Any policy changes must examine the need for alternatives and ensure that these are in place. Failure to address this will result in policy changes not being accepted.
- Participation – Engagement with business, industry and the general public is essential
- Legislation – Policy must be supported by legislation but this should not be seen as the most important factor of any strategic planning. That said, establishing increased producer responsibility is likely to be based on legislation.