



KIMO RESOLUTION 3/09

Presented by the Secretariat

Microplastics

Plastics have brought many societal benefits and are hugely important in modern life. As a consequence annual production has increased from 5 million tonnes in the 1950s to over 230 million tonnes today. Because of their durability, discarded plastic items are accumulating in landfill sites and as litter in terrestrial and aquatic habitats. This debris poses a global environmental problem, due to its persistence in the marine environment, and has been identified as one of the most important pollution-related issues in the world by the United Nations Environment Programme.

Since most plastics are buoyant, the problems associated with this debris are particularly evident in marine habitats where over 180 species including mammals, birds, fish and invertebrates are known to ingest plastic. The incidence of ingestion can be extremely high. For example, in the North Sea over 95% of Fulmars (*Fulmarus glacialis*) were found to have plastic in their guts. There is increasing concern that ingestion of plastic debris presents a hazard to wildlife and could lead to the transfer of toxic chemicals to the food chain.

Research by the University of Plymouth has shown that plastic debris is fragmenting in the environment and that microscopic pieces of common polymers including polyethylene, polyvinyl chloride and polypropylene are now present on shorelines and in the water column throughout the North East Atlantic. Pieces as small as 2µm (micrometers) have been identified and their abundance has increased over the past 40 years. Some samples of strandline material now contain more than 10% plastic and because conventional polymers will not biodegrade it seems inevitable that the abundance of these fragments will continue to increase. Research by KIMO Sweden has shown that in coastal waters microplastics, collected with an 80µm mesh net, are found in concentrations of between 150 – 2400 particles per m³. In one harbour area outside a polyethylene production plant concentrations of 102,000 plastic particles per m³ of seawater were recorded.

Their abundance together with their size mean that such fragments could be ingested by a wide range of organisms including birds, fish and small invertebrates. Fragments of plastic have been also shown to concentrate pollutants that have arisen in the environment from other sources. This effect can be substantial with persistent organic pollutants such as PCBs, DDE, nonylphenols and phenanthrene becoming 5 to 6 orders of magnitude more concentrated on plastic debris than in the surrounding seawater.

Some plastics also contain potentially harmful substances that are incorporated during manufacture as flame-retardants, plasticisers and antimicrobials. Research, using the lugworm, *Arenicola Marina* (a common deposit feeder eaten by numerous species of birds and fish), has shown that ingestion of plastic could provide a mechanism facilitating the transport of these pollutants to the food chain.

KIMO believes that given the quantities of plastic waste that are discarded annually it is now essential to establish the full environmental significance of plastic debris in the transport of pollutants to marine life and in line with the precautionary principle reduce inputs of microplastics to the marine environment.

Therefore KIMO,

Urges

All European Governments to:

- 1) Fund research into the environmental effects of microplastics in the marine environment and the potential transfer of toxic chemicals to the food chain**
- 2) Undertake monitoring programmes to establish the extent of contamination of the seabed and water column by microplastics**
- 3) Ban the use of microplastics in products, such as soaps, where they will be transported into the marine environment**
- 4) Tighten controls on discharges from point sources such as plastic production facilities**

KIMO members:

Agree to submit this Resolution to all National Governments, the European Commission and other relevant organisations.