

‘Environmental Toxicology and Chemistry’ publishes ECETOC-commissioned study into microplastics ingestion

BRUSSELS, 9 April 2020 – An article commissioned by ECETOC’s Microplastics Scientific Platform, ‘Towards improved understanding of the ingestion and trophic transfer of microplastic particles – Critical review and implications for future research’, has been published in the journal *Environmental Toxicology and Chemistry*¹.

Microplastic particles (MPs) in the environment and in the stomachs and intestines of aquatic organisms have been observed routinely over the past 50 years. The review, by Dr Todd Guoin, collates data on MP ingestion for more than 800 species representing approximately 87,000 individual organisms. Plastic debris and MPs are observed in about 17,500 or 20% of them.

The article says that, while strong evidence exists for the biological ingestion of MPs, they do not appear to bioaccumulate. Nor is there evidence of biomagnification (increasing concentrations of MPs at successively higher levels in a food chain). More than 99% of observations from field studies report MPs in the gastrointestinal tract.

Dr Guoin’s study found large variations in how samples are collected, processed, analysed, and reported. This caused significant challenges in trying to assess temporal and spatial trends, or understanding the biological mechanisms involved. Nevertheless, several studies suggested that the characteristics of MPs ingested by organisms were generally representative of the plastic debris found close to where the organisms were collected.

The article concludes there is an urgent need to develop and apply standardised analytical methods to monitor spatial and temporal trends of ingested MPs, which could, in turn, be useful in assessing efforts to reduce plastic and MPs emissions to the environment.

Dr Guoin is a research consultant trading as TG Environmental Research and provides technical support to industry activities at ECETOC, Cefic and the International Council of Chemical Association (ICCA), in particular relating to chemical safety assessments for both humans and the environment.

The full article can be found [here](#) (free access).

-ENDS-

NOTE TO EDITORS

The Microplastics Scientific Platform gathers representatives from ECETOC, PlasticsEurope, Cefic, ICCA Microplastics Task Force and Cefic LRI.

For more information, contact ECETOC Secretary General Olivier de Matos at olivier.dematos@ecetoc.org

ABOUT [ECETOC](#) (European Centre for Ecotoxicology and Toxicology of Chemicals)

ECETOC is a collaborative space for leading scientists from industry, academia and governments to develop and promote practical, trusted and sustainable solutions to scientific challenges which are valuable to industry, as well as to the regulatory community and society in general.

¹ Note from ET&C: “This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1002/etc.4718” (p.1 of doi: 10.1002/etc.4718).