

Nanoplastics: State of knowledge and environmental and human health impacts

Dossier de la rédaction de H2o
February 2023

This Future Brief presents the current science on nanoplastics: their detection, assessment and monitoring; their impacts in the environment, ecotoxicity, and environmental fate; and their potential impacts on human health.

Plastics are highly versatile and are ubiquitous in society, fulfilling a wide array of valuable functions in our economy and daily lives. While there has been a strong push to ban single-use plastics and develop plastic-free and recyclable packaging and products in recent years, notably as part of the EU's Plastics Strategy and Circular Economy Action Plan, plastic disposal remains a key threat to our natural environment, and the material is accumulating in our soil and seas in unprecedented amounts. It has been suggested that an extra 33 billion tonnes of plastic will be added to the planet by 2050 (Galloway, 2015) and some have suggested the current era may even be referred to as the 'Plasticene' (Reed, 2015). In the environment, plastic breaks down to form microplastics and, at even smaller scales, nanoplastics. Research has focused on microplastics rather than nanoplastics - therefore, the situation on nanoplastics' impact on the environment and human health is unclear. Despite this, nanoplastics research is a very fast-moving area. New techniques and methods currently in development to detect, identify and analyse nanoplastics and their impacts, in the environment and in organisms.

Directorate-General for Environment (European Commission), University of the West of England (UWE) - Science Communication Unit