

Invisible signs in the future of the sea - Educational laboratory on microplastics during the Italian Science Festival

Garaventa Francesca¹, Chiara Gambardella¹, Veronica Piazza¹, Silvia Morgana¹, Elisa Costa¹, Lorenzo Merotto¹, Silvia Lavorano², Roberta Parodi², Vincenzo Pisano², Maria Fontana³, Emanuela Iovino³, Rosella Bertolotto⁴ and Marco Faimali¹

¹ Institute of Marine Sciences (ISMAR) – National Research Council (CNR), Via de Marini 6, 16149 Genova, Italy
E-mail: francesca.garaventa@ismar.cnr.it

² Costa Edutainment SpA, Acquario di Genova, Area Porto Antico, Ponte Spinola, 16128 Genova, Italy

³ Palazzo Ducale Fondazione per la Cultura, Piazza Matteotti 9 - 16123 Genova

⁴ Agenzia Regionale per la Protezione dell'Ambiente Ligure (ARPAL) - Via Bombrini 8 - 16149 Genova, Italy

“Can you tell me where plastics end up?” is the educational laboratory presented by the Institute of Marine Sciences (ISMAR-CNR) in collaboration with the Aquarium of Genoa and the Palazzo Ducale Foundation during the “Festival della Scienza” the most important Italian Science Communication event. Plastic is an integral part of our lives. Its global production exceeds 300 million tons per year which is about the weight of 54 and a half million of African elephants!!

Before long, the plastic becomes waste and, unfortunately, about 8,000,000 tons, roughly the weight of 50,000 blue whales, inevitably end up in the great reservoir of the planet: the Sea. Plastic waste in the sea degrades, becoming smaller; when they are under 5 mm they are called microplastics. The microplastics are a serious threat to the marine environment. In fact, they may have direct effects on organisms, as in the case in which are ingested, or indirect ones, such as those related to chemical substances that can be adsorbed on their surface. To date, the signs that microplastics can leave, once they enter the food chain of the largest ecosystem on the planet are still little known.

The laboratory speaks to a wide audience (from 6 to 99 years old visitors) and gives the opportunity to know the problem of plastic through practical experiences that will help you understand how to perform the monitoring and what tools are used to quantify and recognize microplastics in marine water and sediment samples. In addition, with the help of microscopes visitors can have a look into the “micro world” to locate the signs that plastic leaves on marine organisms in order to understand why they can pose a threat to humans.

Finally, visitors are invited to contribute to the realization of a collective installation of strong visual impact, to demonstrate the unwitting role that each of us has in the process that is transforming our sea into a sea of plastic.

The workshop is an opportunity to address, in a simple and informal way, an issue of great relevance contributing to raising questions, issues and possible solutions. The presentation will tell the process of the birth of the workshop, its development and how visitors lived it.