

BASEMAN

Defining the baselines and standards for microplastics analyses in European waters

Project Description

Project Coordinator: Dr. Gunnar Gerdt, Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, Germany

Project Period: January 1, 2016 - December 31, 2018

Since the middle of last century rapidly increasing global production of plastics has been accompanied by an accumulation of plastic litter in the marine environment. Dispersal by currents and winds does not diminish the persistence of plastic items which degrade and become fragmented over time. Together with micro-sized primary plastic litter from consumer products these degraded secondary micro-fragments lead to an increasing amount of small plastic particles (smaller than 5 mm), so called "microplastics". The ubiquitous presence and massive accumulation of microplastics in marine habitats and the uptake of microplastics by various marine biota is now well recognized by scientists and authorities worldwide.

Although awareness of the potential risks is emerging, the impact of plastic particles on aquatic ecosystems is far from understood. A fundamental issue precluding assessment of the environmental risks arising from microplastics is the lack of standard operation protocols (SOP) for microplastics sampling and detection. Consequently there is a lack of reliable data on concentrations of microplastics and the composition of polymers within the marine environment. Comparability of data on microplastics concentrations is currently hampered

by a huge variety of different methods, each generating data of extremely different quality and resolution. Although microplastics are recognized as an emerging contaminant in the environment, currently neither sampling, extraction, purification nor identification approaches are standardised, making the increasing numbers of microplastics studies hardly -if at all- comparable.

BASEMAN is an interdisciplinary and international collaborative research project that aims to overcome this problem. BASEMAN teams experienced scientists (from different disciplines and countries) to undertake a profound and detailed comparison and evaluation of all approaches from sampling to identification of microplastics. BASEMAN deploys cutting-edge approaches to tackle the two major themes of the call: 1) "The validation and harmonisation of analytical methods" which is indispensable for 2), the "Identification and quantification of microplastics". BASEMAN's project outcomes will equip policy makers with the tools and operational measures required to describe the abundance and distribution of microplastics in the environment. Such tools will permit evaluation of member state compliance with existing and future monitoring requirements.

Consortium

Name	Organisation	Country
Dr. Gunnar Gerdts	Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, Helgoland	Germany
Dr. Kevin Thomas	Norwegian Institute for Water Research (NIVA), Oslo	Norway
Dr. Dorte Herzke	Norwegian Institute of Air Research (NILU), Tromsø	Norway
Dr. Matthias Haeckel	GEOMAR Helmholtz-Zentrum für Ozeanforschung, Kiel	Germany
Dr. Barbara Scholz-Böttcher	University of Oldenburg, Institute for Chemistry and Biology of the Marine Environment (ICBM), Oldenburg	Germany
Dr. Christian Laforsch	University of Bayreuth, Bayreuth	Germany
Dr. Fabienne Lagarde	University of Maine, Le Mans	France
Dr. Rick Officer	Galway-Mayo Institute of Technology, Galway	Ireland
Dr. Maria Luiza Pedrotti	CNRS-LOV, Villefranche sur Mer	France
Dr. Giuseppe Andrea de Lucia	CNR-IAMC, Oristano	Italy
Prof. Paula Sobral	NOVA.ID FCT, Caparica	Portugal
Dr. Jesus Gago	Instituto Español de Oceanografía (IEO),Vigo	Spain
Dr. Soledad Muniategui Lorenzo	Universidade da Coruña (UDC)-Instituto, A Coruña	Spain
Dr. Fredrik Noren	IVL Swedish Environmental Research Institute, Fiskebäckskil	Sweden
Prof. Martin Hassellöv	University of Gothenburg, Gothenburg	Sweden
Dr. Tanja Kögel	The National Institute of Nutrition and Seafood Research (NIFES), Bergen	Norway
Dr. Valentina Tirelli	OGS- National Institute of Oceanography and Experimental Geophysics, Trieste	Italy
Dr. Miguel Caetano	Instituto Português do Mar e da Atmosfera, Lisbon	Portugal

Associated partners

Dr. Amandine Collignon	University of Liege, Liège	Belgium
Dr. Inga Lips	Marine Systems Institute at Tallinn University of Technology, Tallinn	Estonia
Dr. Ole Mallow	Vienna University of Technology, Vienna	Austria
Outi Seatala	Finnish Environment Institute, Helsinki	Finland
Dr. Karsten Goede	Rap.ID Particle Systems GmbH, Berlin	Germany
Dr. Priscilla Licandro	Sir Alister Hardy Foundation for Ocean Science (SAHFOS), Plymouth	United Kingdom