

BASEMAN

Defining the baselines and standards for microplastics analyses in European waters

Short Description

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

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 |