

Research Project

Occurrence of Microplastics in the Antarctic Seas

Third-party funded project

Project title Occurrence of Microplastics in the Antarctic Seas

Principal Investigator(s) [Holm, Patricia](#) ;

Co-Investigator(s) [Leistenschneider, Clara](#) ; [Segner, Helmut](#) ; [Amaral Zettler, Linda](#) ; [Gerds, Gunnar](#) ; [Meyer, Bettina](#) ;

Project Members [Mani, Thomas](#) ;

Organisation / Research unit

Departement Umweltwissenschaften / Aquatische Ökologie (Holm)

Department

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Project start 01.05.2019

Probable end 30.04.2020

Status Completed

We aim to advance our knowledge and understanding of the sources of microplastics (MP) in the remote Antarctic marine ecosystem. By applying material flow analysis and integrating the results into an ocean circulation model, we will evaluate the evidence that MP can cross the Antarctic Circumpolar Current (ACC) into the Southern Ocean around Antarctica.

A successful outcome will include achieving the following goals:

- Providing baseline information on concentrations, composition and distribution of MP in surface waters from the Southern Ocean,
- Evaluate the sources of MP in the Southern Ocean, by: (1) comparing MPs in the more anthropogenically impacted Scotia Sea (SS) and Western Antarctic Peninsula (WAP) versus relatively pristine Weddell Sea (WS) and (2) modeling MP transport within and to/from Antarctica.
- These comparisons will be based on: (a) characterization of MP properties, such as particle morphology, polymer composition, extent of degradation, and (b) analysis of persistent organic pollutants (POPs) loads, and (c) examination of the microbial communities of the MP (Plastisphere).
- Modeling the potential contribution of local sources, such as Waste Water Treatment

Plant (WWTP) effluents from vessels and research bases, for MP contamination of the Southern Ocean around Antarctica.

Keywords Microplastics, Antarctic

Financed by

Foundations and Associations

University of Basel

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Specify cooperation partners

ID	Kreditinhaber	Kooperationspartner	Institution	Laufzeit - von	Laufzeit - bis
4661604	Holm, Patricia	Primpke, Sebastian, Dr.	Alfred-Wegener-Institute Helgoland	01.01.2021	31.12.2023