

PLASTICS IN THE ARCTIC?



TOPtoTOP Arctic Research Expedition 2021

Analysing Origin, Quality and Ecological Impacts of Microplastic Pollution in the Arctic in an exemplary, environmental-friendly way: from the highest volcano in the Arctic to the pack ice and the Arctic Ocean, we EXPLORE – INSPIRE – ACT. Join our campaign “SAVE the ARCTIC”!

Exposé

The Arctic is facing increasing stressors under global change. Plastic pollution is starting to become a major threat to pristine Arctic environments. Yet, research concerning the quality and quantity of pollution, as well as public awareness on this issue, remains scarce. We intend to change this with our research expedition and combined outreach work!

Summary

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Motivation

Plastic production remains on the rise. This causes growing concern for the vast amounts of inadequately disposed debris entering oceans and atmosphere globally and its effects on Arctic environments. Due to the remote and seemingly pristine nature of the Arctic, low levels of plastic pollution were expected. However, the few studies measuring Microplastics (MP) in the Arctic have recorded the presence of MPs in marine and terrestrial environments, as well as ingested by Arctic biota. The plastic fragments become increasingly bioavailable and begin to provoke negative responses. Studies at a greater spatial scale however (especially for terrestrial habitats) are largely missing, as is the knowledge of the exact origins and transportation pathways. We intend to shed light on this rising issue and use our research expedition, as well as our “SAVE the ARCTIC” campaign, to advocate for a better world - in our case: a world with far less plastic!

TOPtoTOP Arctic Research Expedition 2021

Dario Schwörer and his family sailed around the globe by fair means over the last two decades. Their “TOPtoTOP Global Climate Expedition” (toptotop.org) led them on a mission to educate the younger generation about the rising climate crisis and ways to prevent it. This summer, the TOPtoTOP-Crew teams up with Austrian researchers Sebastian Pohl and Max Kortmann to study the scarcely researched Arctic MP pollution. A highlight will be the first ever MP sampling on the 2277m high Beerenberg volcano on Jan Mayen. The 15m sailboat “Pachamama” will take our team on an environmentally friendly journey from Tromsø to Svalbard, Jan Mayen, Greenland and finally down to Iceland, from May until end of July 2021.

Scientific Research Projects

We plan to conduct two major research projects during this expedition. The first one focuses on the terrestrial MP pollution, the distribution vectors of the particles and the effects they have on biota in cryospheric habitats. The second one is an on-going project that aims to understand the localization, concentration, and composition of MPs in Arctic waters, as well as the role the North Atlantic and Norwegian Coastal Currents may play in transporting plastics into the Arctic. We will sample terrestrial locations with differing anthropogenic impacts (Jan Mayen and Greenland being less, Svalbard and Iceland more impacted), as well as the marine environments along the route. Our expedition will gather important and still scarce data concerning the MP pollution around the heart of the Arctic Sea!

Outreach and Awareness

We believe that science and knowledge drive change. That is why we intend to couple our research with comprehensive outreach work. We want to spread the word about the increasing plastic problem we are globally facing. To achieve this, we cooperate with schools from Austria, Liechtenstein and Switzerland, as well as the local Arctic communities. We will hold workshops focused on the expedition and our results, but also include the local youngsters in our sampling efforts and offer them skill-sharing possibilities. To follow the progress of our Arctic adventure, we will feed our own Online Expedition School with live reports and videos from the field (adventure.ch). We hope, this first-hand experience of our sustainably executed Arctic expedition inspires the youngster to help mitigate the increasing problems that arise with global change.

Financing the participation of Austrian researchers Max and Sebastian

We (Max Kortmann and Sebastian Pohl) are seeking support to help fund our research efforts. We calculate with roughly 7'500€ per person for an 8-week expedition. We already attained funding from the “Deutsche Gesellschaft für Polarforschung” and expect support from our home university of Innsbruck. We have also set up an online crowdfunding page (donorbox.org). As we have not yet been notified of the outcome of our other requests, we are still looking for additional funding in the range of approximately 12'000€. We would therefore like to ask for your financial support to help us “SAVE the ARCTIC”!

Additional Information

You can find our detailed project description, as well as further information concerning our “TOPtoTOP Arctic Research Expedition 2021” on our expedition website (toptotop.org). If you have specific questions or would like to have further information regarding certain subjects, please don't hesitate to contact us!