What's the deal?

The global annual production of plastics reached **381 million** tons in 2015, and it is estimated that about ~3% of global waste ends in ocean waters¹. Degradation of manufactured plastics such as fishing lines could take up to 600 years, although still leaving behind microplastic fragments (<5mm in diameter)¹.

Two major concerns regarding microplastics:

1) Ingestion of microplastics

- Reduced growth and development in marine organisms
- Accumulation in the food chain



Translocating from fish intestine to fish fillets \rightarrow human consumption?²

2) Microplastics as a vector for spreading toxins and biohazards, e.g., antibiotic resistance genes.³

The Arctic and the Antarctic are literal polar opposites, but they both have in common that they are relatively remote and don't pose as any larger sources of plastic waste.

Which have more microplastics in the sediments?

Background photo by Paulo Oliveira



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The Polar Regions: Pristine Areas or Garbage Dumps?

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Our findings show that there is significantly more microplastics in the Arctic sediments compared to the Antarctic sediments 6000 ₩ 75°N 2000 Antarctica Arctic

- The scatterplot illustrates the amount of microplastic particles per kilo sediment, in which each point represents one
- sample station. The mean is marked
- by a black dot, and the line shows the standard deviation.
- With a two welch t-test at a 95%
- confidence interval, we got a p value of 0.003. This indicates that the difference in microplastic particles is significant.



*All authors contributed equally

How did we do it?

80°N

100°W

The data used was obtained from three articles ^{4, 5, 6} and consisted of core sediment samples from the study areas below, where each point represents one sample.





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