

Microplastics may be abundant in the surface sediments of Baynes Sound and Lambert Channel

23 May 2018



Debris collected from the beaches of Baynes Sound, 2016. Each year since ca. 2006, 3-5 metric tonnes of debris has been collected by local residents and volunteers. 90% of the debris originates from the shellfish industry. Credit: Denman Island community member

Microplastics were found at all 16 sites studied in Baynes Sound and Lambert Channel, British Columbia, and were most abundant in the sediments of Henry Bay and Metcalfe Bay, according to a study published May 23, 2018 in the open-access journal *PLOS ONE* by T. N. Kazmiruk from Simon Fraser University, Canada, and colleagues.

As the production of plastic products increases globally, plastics are known to be a large component of marine and beach litter. The abundance and distribution of microplastics, or tiny plastic particles ≤ 5 mm in length, has been studied within sediments, or tiny pieces of matter that float at the top of water, in marine and freshwater

environments. However, less is known about how the abundance and distribution of microplastics varies across different environments.

Kazmiruk and colleagues sampled sediments from 16 sites within Lambert Channel and Baynes Sound, British Columbia, Canada. They analyzed these [sediment](#) samples for microplastics, grain size and organic matter. The researchers found microplastics at all the sites, and identified three main types: microfibers, microbeads and microfragments. The most common type found was microbeads, which comprised a maximum of 25,000/kg sediment. The greatest number of all three types of microplastics was found within Baynes Sound, in Henry Bay and Metcalfe Bay, regions of intense [shellfish](#) aquaculture.

Given the large abundance of microplastics identified in a major region for shellfish growth and industry, the authors suggest that further research should assess the extent to which the shellfish are ingesting the microplastics, which was beyond the scope of this study. If so, any future methods for managing the possible effects of microplastics on the shellfish could have implications for Canada's oyster farming industry and perhaps serve as a guide for other shellfish farming regions of the world.

Study co-author Leah Bendell says: "Given the growing awareness of the tremendous impact that plastics are having on marine ecosystems, we must adopt a zero tolerance policy for plastics; that is, no plastics must be allowed to enter our [marine ecosystems](#)."

More information: Kazmiruk TN, Kazmiruk VD, Bendell LI (2018) Abundance and distribution of microplastics within surface sediments of a key shellfish growing region of Canada. *PLoS ONE*

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