

# Microplastics in spotted seal stomachs from the Chukchi and Bering seas in 2012 and 2020

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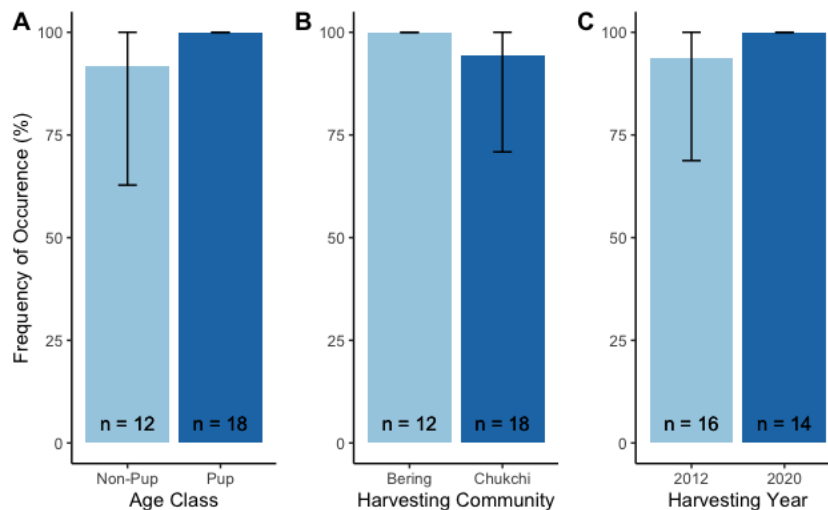
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## What are microplastics?

- Small pieces of plastic that usually come from the breakdown of larger plastic objects, such as water bottles, grocery bags, fishing nets, and clothing. Most microplastics are not visible with the naked eye.
- In the Arctic, they have been found in ocean water, sediment, sea ice, and seal prey (including Arctic cod).
- Microplastics enter the ocean through shipping and fishing activities, wastewater treatment plants that discharge into the ocean, run-off from rivers, or atmospheric deposition.

## What did we find?

- We examined 30 stomachs from spotted seals harvested from Shishmaref and Gambell, AK specifically for microplastics.
- 29 of 30 stomachs (96.7%) contained microplastics.
- We found a total of 163 microplastics.
- There was no significant difference in microplastic presence between spotted seal pups and non-pups, between Shishmaref and Gambell, or between 2012 and 2020 (Fig. 1).



**Fig. 1.** Comparison of microplastic frequency of occurrence (FO) by (A) age class, (B) harvesting community, and (C) harvest year. Error bars indicate SD of the mean FO, sample size (n) shown in each bar.

## What does this mean?

- Microplastics have been in the environment and ingested by spotted seals for at least the past 10 years.
- Now that we have a baseline and know spotted seals have been ingesting microplastics, we can develop future studies to assess possible absorption in the seals' organs and possible long-term toxicity from plastics.

**Although we have found microplastics in seal stomachs for at least the past 10 years, we have not yet determined how they affect seal health.**