

Diet of young polar cod more varied than previously assumed

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Polarstern floats along with an ice floe on which research is carried out during the MOSAiC expedition. Credit: Manuel Ernst

A new [publication](#) in the *Journal of Fish Biology* compares the diet of fish caught during different expeditions on board icebreaker Polarstern.

This provides a more complete picture of their food sources in the central Arctic Ocean, which can contribute to nature management and fisheries policy in this area.

Earlier research by Wageningen Marine research (WMR) and partners, including the German Alfred Wegener Institute (AWI), showed that many juvenile polar cod live close to the sea ice of the central Arctic Ocean, feeding partly on organisms that also live in and under the sea ice. Because of the difficulty in catching these fish, there are few studies looking at their [diet](#).

One of the reasons why so little is known about young fish under the sea ice is that it is difficult to get under the ice with a large enough net. Thanks to the Surface and Under Ice Trawl (SUIT), this was possible, and polar cod were sampled during three expeditions. Another opportunity to catch fish occurred during the MOSAiC expedition, during which the Polarstern drifted along with the Arctic Ocean sea ice for a year. During this [expedition](#), fish were caught in various ways. Former AWI colleague Giulia Castellani even caught polar cod by hand through a hole in the ice.

Diet of polar cod

The analysis showed that the diet of juvenile polar cod is more varied than previously assumed, and varies by location and season. To gain more insight into feeding behavior, the study examined what [food](#) was available at the sites where the fish were caught and what the energy content of this food was.

Carmen David of Wageningen University developed a [computer model](#) to investigate how the growth of the fish might be influenced by the quantity and quality of the food, and the [water temperature](#).

Results showed that juvenile polar cod appear to be "lazy" eaters, mainly consuming food that is easy to catch, such as slow-swimming animals, animals that are present in large numbers, or animals that accumulate under the sea ice. Although the fish grow better from foods with high energy content, such as copepods, the fish do not seem to actively select for these.

More information: Fokje L. Schaafsma et al, Insights into the diet and feeding behavior of immature polar cod (*Boreogadus saida*) from the under-ice habitat of the central Arctic Ocean, *Journal of Fish Biology* (2024). [DOI: 10.1111/jfb.15836](https://doi.org/10.1111/jfb.15836)

Provided by Wageningen University

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