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The Importance of Sea Ice: Prey

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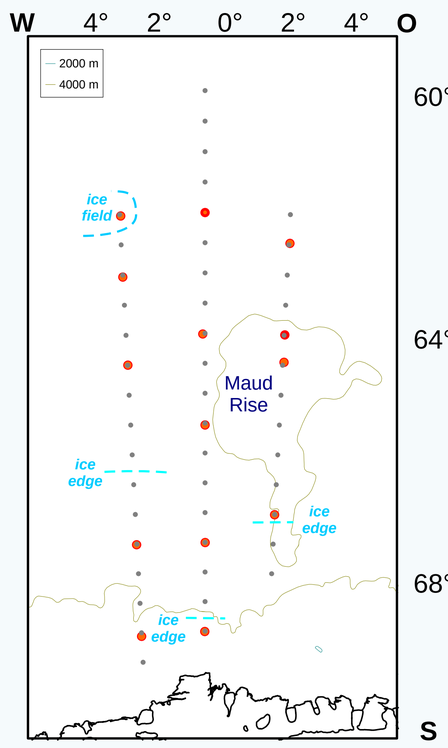
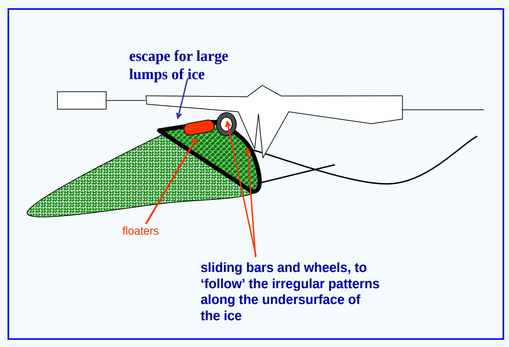


The research area of ANT XXIV-2 with the standard station grid (grey dots). SUIT stations are indicated in red. The 0°-meridian transect was sampled two weeks after the 3°W and 3°E transects. By that time, the ice edge had retreated considerably southwards.

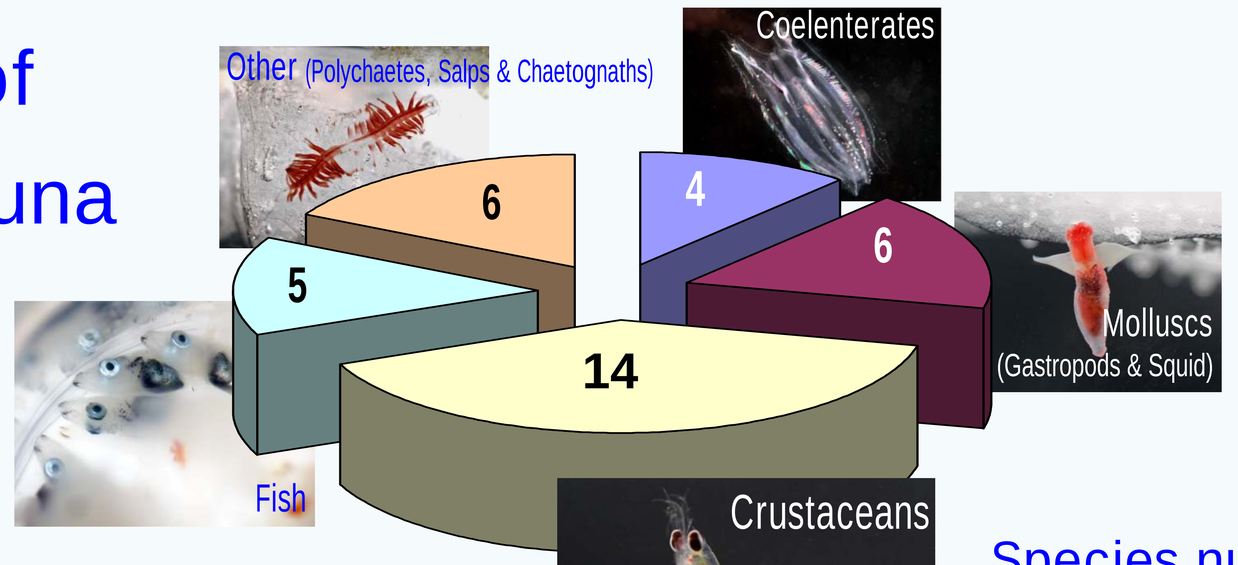
The Antarctic seasonal sea ice zone features a unique ecosystem. In recent years it has become increasingly evident that the sea ice itself is a key factor in supporting Antarctic wildlife stocks.
The quantitative composition of the fauna dwelling at the ice-water interface however, is largely unknown due to the inaccessibility of the under-ice habitat.

A special net was developed at Wageningen IMARES allowing quantitative sampling under ice and at the sea surface.
The Surface and Under Ice Trawl (SUIT) consists of a heavy steel frame in front of a typical shrimp-net with a fine-mesh plankton net in the codend. Buoyancy elements on top of the frame ensure that the net always stays at the surface. Wheels at the upper side help to overcome ridges under the ice.



In close cooperation with AWI, three expeditions with the SUIT were conducted with RV “Polarstern”in the Lazarev Sea. The strong icebreaker is one of the few research vessels able to handle heavy sampling gear like the SUIT.
This poster presents preliminary data from the expedition ANT XXIV-2 between 28th November 2007 and 4th February 2008.

Diversity of under-ice fauna



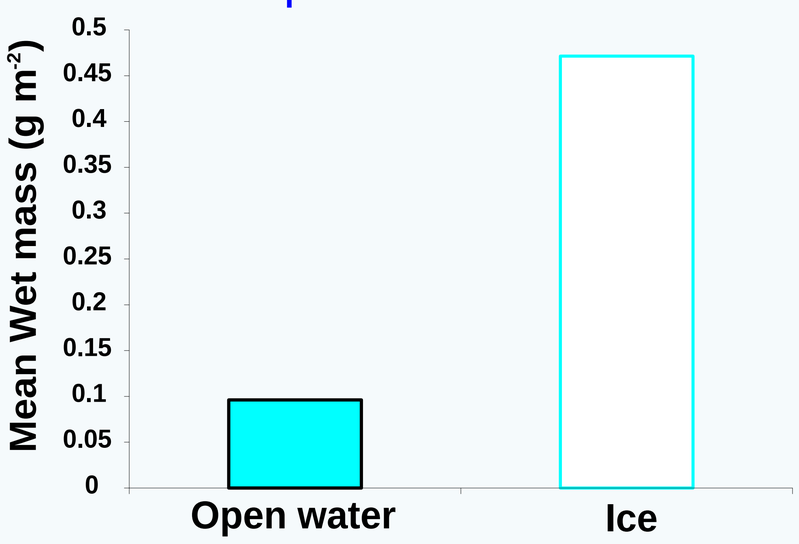
Thirty-five species of macrofauna (≥1cm) were encountered in the surface layer of the Lazarev Sea. Species composition was dominated by crustaceans, such as Antarctic krill.

Species numbers

Next to krill, which often dominated the species community, pelagic snails (Pteropoda), comb jellyfish (Ctenophora) and arrow worms (Chaetognatha) were abundant.

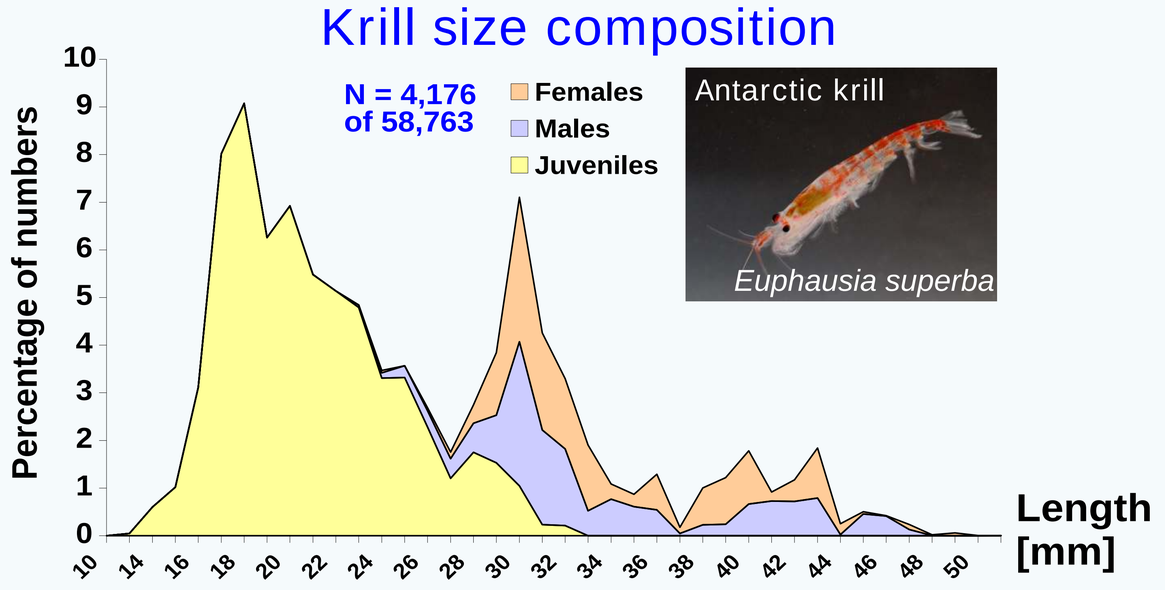
Sea ice preferred

Zooplankton biomass



Under the ice, a tendency towards higher zooplankton biomass was apparent compared to the upper two-metre layer in open water.
Such a concentration of potential prey can partly explain the preference of the Antarctic top predator community for the pack-ice zone.

Krill size composition



The importance of sea ice as a nursery ground was indicated by the size composition of Antarctic krill, which was strongly dominated by juveniles, and the presence of juvenile fish and squid in under-ice catches.

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