Under-ice communities

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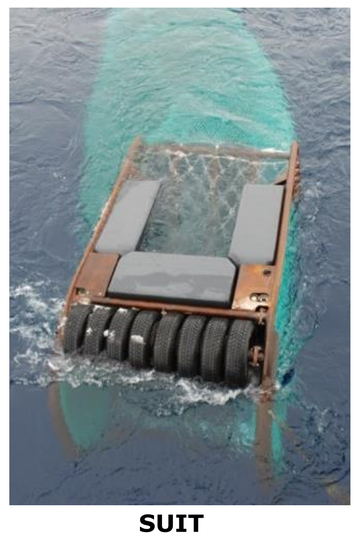
This poster shows **preliminary results** from an Arctic and an Antarctic research expedition on board RV *Polarstern* in the framework of the *Iceflux* projects of IMARES and AWI. Community composition at different depth strata of the under-ice water column were investigated to asses its structure and highlight species that define the under-ice community.

Methods

Three different depth strata between 0-1000m depth were sampled with a multi- Rectangular Midwater Trawl (RMT). The upper 2m of the water column where sampled with the Surface and Under Ice Trawl (SUIT).



SUIT

RMT

Aims of the project are…….

.....to quantify the trophic carbon flux from sea ice into the under-ice community.
.....to investigate the importance of sea ice in the life cycle of living resources.
.....to increase knowledge of the impact of changing sea ice habitats on polar marine resources for e.g. fisheries management and conservation.

PS92 ARK-XXIX/1, 19 May 2015 – 28 June 2015

Figure 1 RMT catch composition (0-200m): the abundance of major taxa in numbers per station

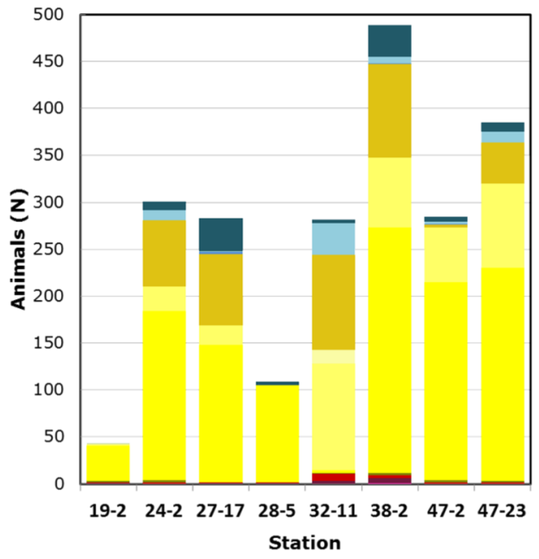
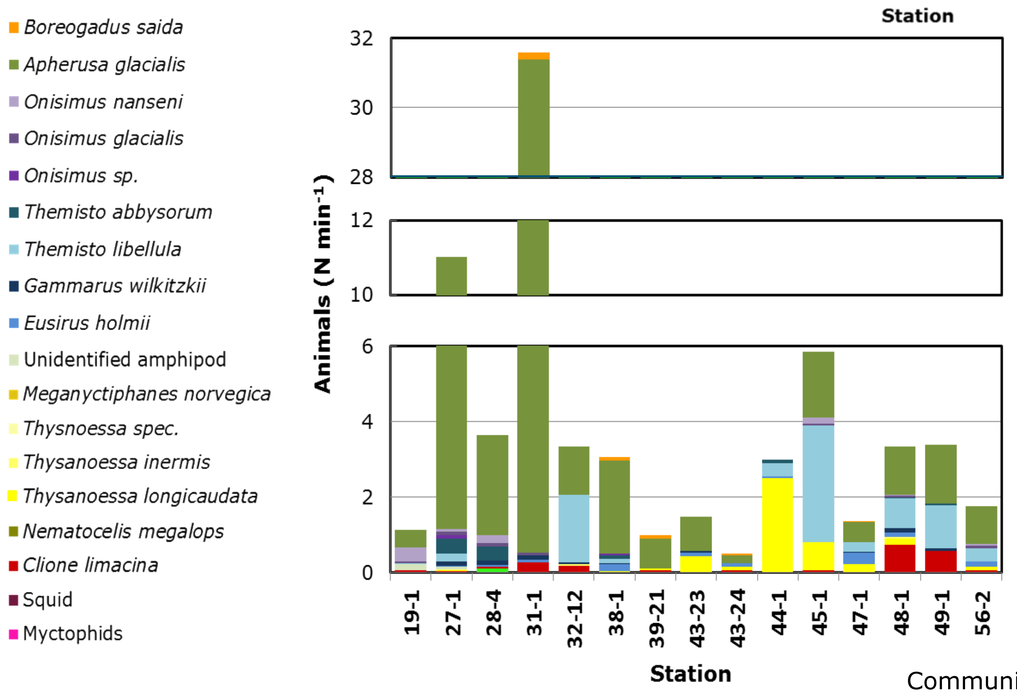
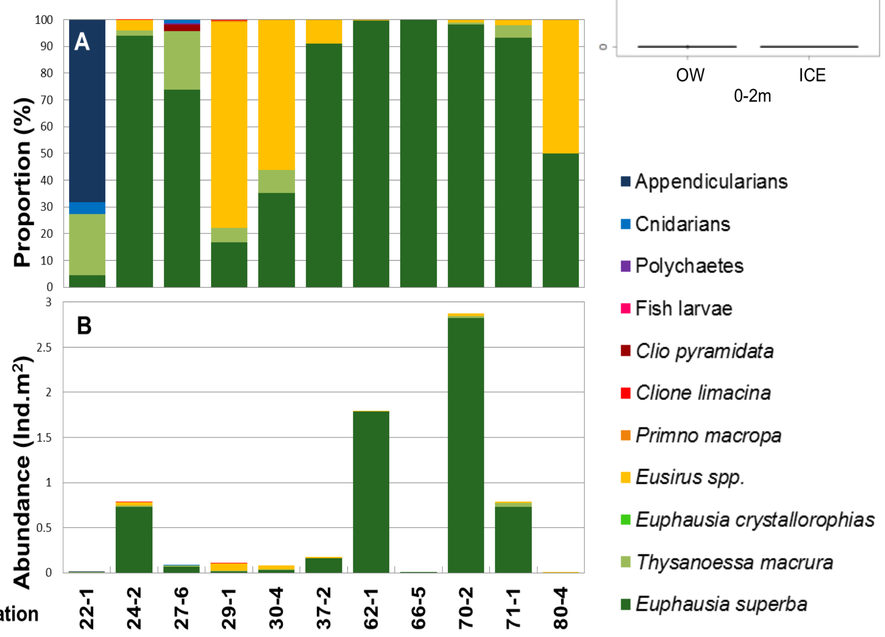


Figure 2 (below) SUIT catch composition (0-2m): the abundance of major taxa at each SUIT station in numbers per minute trawled.



PS89 ANT-XXX/2, 2 December 2014 – 1 February 2015

Figure 3 (below) A) SUIT catch composition per station in percentage of total abundance. B) abundance of major taxa at each SUIT station.



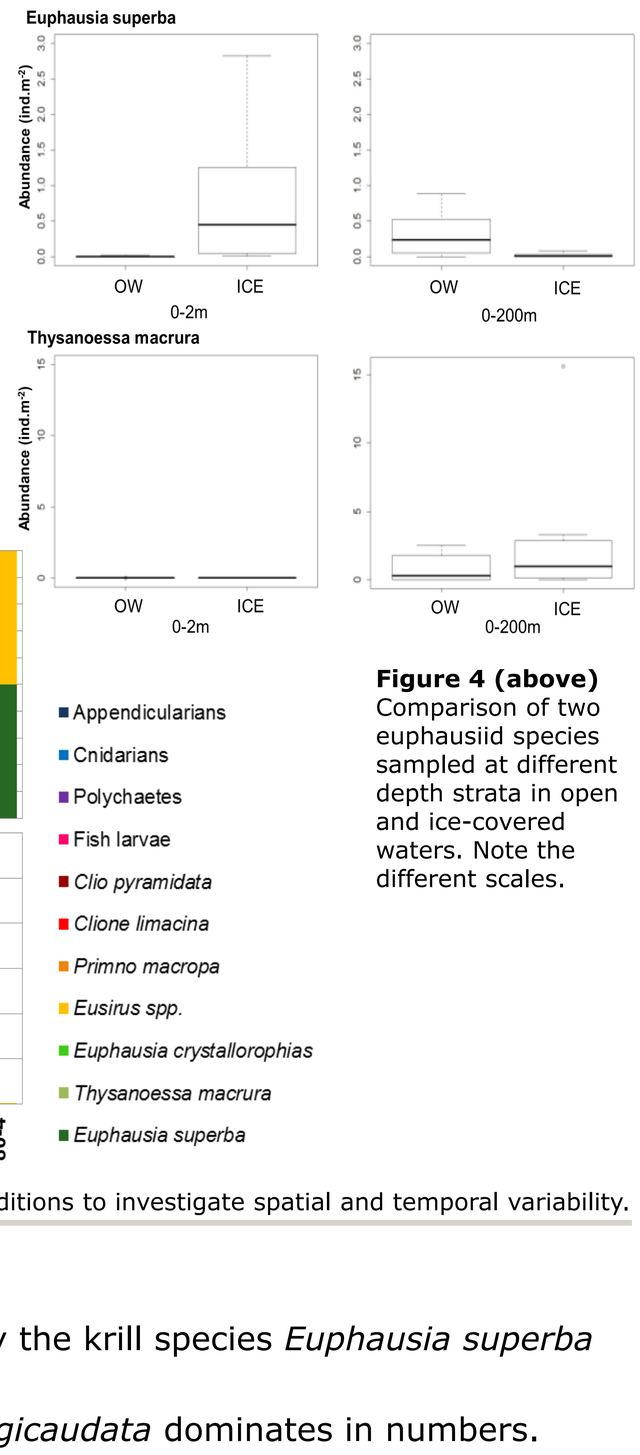


Figure 4 (above) Comparison of two euphausiid species sampled at different depth strata in open and ice-covered waters. Note the different scales.

Community compositions will be compared to results of previous expeditions to investigate spatial and temporal variability.

Preliminary conclusions Arctic = Svalbard shelf and Yermak Plateau, Antarctic = Lazarev Sea

- The under-ice surface water (0-2m) is dominated by the amphipod *Apherusa glacialis* in the Arctic, and by the krill species *Euphausia superba* in the Antarctic.
- Species of krill dominate the deeper layers (0-200m) in both polar oceans. In the Arctic, *Thysanoessa longicaudata* dominates in numbers. However, *Meganyctiphanes norvegica* is larger than the other krill species and would therefore dominate if biomass was considered. *Thysanoessa macrura* dominates in the Antarctic, except in the coastal waters where *Euphausia crystallorophias* is the most abundant species.
- Also abundant in both polar regions were copepods, chaetognaths and jelly fish. These are not yet enumerated and could possibly be more abundant than the species mentioned above. Additionally, appendicularians were abundant in the Arctic, siphonophores in the Antarctic.

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