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Title: ICE-RELATED ZOOPLANKTON SEASONAL DYNAMICS IN A HIGH ARCTIC FJORD

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Seasonal dynamics of mesozooplankton community was studied monthly from March to October 2007 in the high Arctic, Rijpfjorden (Svalbard), and related to abiotic (hydrography, sea ice) and biotic (ice algae and phytoplankton biomass) environmental conditions. Natural seasonal succession of zooplankton community was largely influenced by sea ice conditions, which impacted the hydrography and primary production regime in the fjord.

Three distinct periods could be identified based upon species and life stages composition: (I) winter-spring transition (March-June), with high ice algal biomass in April-June, characterized by peak abundances of *Pseudocalanus minutus*, *Calanus glacialis* females and *Clione limacina*; (II) sea ice break-up and phytoplankton bloom (July), with high numbers of *Calanus* nauplii and young copepodids (stage I and II), as well as larvae of benthic crustaceans such as Cirripedia and Decapoda; and (III) ice-free post-bloom period (August-October), when the pulse of warm waters into the fjord resulted in peak abundances of *Oithona similis*, *O. atlantica*, *Limacina helicina* and Echinodermata larvae within the upper 50 m. At the same time, older copepodids of *C. glacialis* and *C. finmarchicus* had already descended to overwintering depths (>100m).

The mesozooplankton community in Rijpfjorden was numerically dominated by *O.similis*, whereas *C. glacialis* was the dominating taxon in terms of biomass. Zooplankton seasonal succession was delayed by 1-2 months compared to other Svalbard fjords.