

Microhabitats for small Zooplankton created by Marine Snow Aggregates and Fecal Pellets

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Abstract

Optical studies from North Norwegian fjords show that sinking particles harbor a multitude of small zooplankton, feeding on and around them. By analyzing full-frame images collected using an autonomous Video Plankton Recorder and associated environmental data, we were able to assess whether different small zooplankton preferred particle-rich or particle-poor habitats. In particular, the harpacticoid copepod *Microsetella norvegica*, calanoid copepod nauplii and polychaete larvae were associated with aggregates formed from diatom chains, *Phaeocystis* colonies and fecal pellets. These associations were observed during post-bloom conditions in May-June, as well as in late summer and fall. During the productive season, *M. norvegica* occurred mainly in the upper, productive zone, where aggregates formed in the lower part of the Chl *a* peak. In fall, they occurred lower in the water column, often aggregated around layers of sinking or possibly re-suspended particles. An analysis from June suggested a diel variation in habitat preference for *M. norvegica*. These data elucidate the role of small zooplankton species for the transformation of energy in the water column.

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Keywords:

Zooplankton Distributions, Marine Snow, Fecal Pellets. *Microsetella*, VPR

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