

BIOMASS AND BACTERIAL GRAZING ACTIVITY  
OF NANOPROTOZOAN AT THE ICE-WATER INTERFACE  
IN RESOLUTE PASSAGE (ABSTRACT)

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Nanoplanktonic biomass and grazing activity were studied at Resolute Passage in the Canadian Arctic in spring 1992. The spatial variation in biomass beneath a 225 square meter area with changing snow cover was almost as great as the temporal change over the 5-week sampling period. Total bacterial grazing of the protozoan community was assessed by measuring the disappearance of fluorescently labelled bacteria over 20 hours. Nanoplanktonic cell density varied from almost zero to  $2.6 \times 10^9 \text{ m}^{-2}$ . Clearance rates of heterotrophic nanoprotozoans (HNP) ranged from 0 to  $86 \text{ nl HNP}^{-1} \text{ h}^{-1}$  (mean =  $12 \text{ nl HNP}^{-1} \text{ h}^{-1}$ ). Feeding rates on bacteria were high at the beginning of the sampling period but decreased to very low values by the end of May. We conclude from the analysis of carbon budgets that bacteria could not provide the required energy for the observed protozoan growth. The results suggest that a shift in the grazing behavior of HNP occurred during the bloom season and that the microbial loop activity is suppressed in late spring.

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