

ZOOPLANKTON GRAZING IN  
KANEHOHE BAY, HAWAII

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## ABSTRACT

Grazing rates of several abundant zooplankters in Kaneohe Bay, Hawaii were measured at different concentrations of natural phytoplankton. The concentration by volume of suspended particles, as determined with an electronic particle counter, was used as the estimate of food concentration. The relationship between grazing rate per animal and concentration of particulate food conformed closely to a hyperbolic model widely used to describe an organism's rate of uptake of food or other needed substrate as a function of the concentration of the substrate. Maximum observed grazing rates in the eutrophic south sector of the bay are near the maximum rates predicted by the model. The concentrations of particles in other areas of Kaneohe Bay do not appear to be high enough to permit grazing rates to approach their maximum levels. There appears to be no preference by the grazers for particles of a size other than the size most abundant in the environment.