

A COMPARISON OF THE RATES OF DISSOLVED ORGANIC CARBON  
PRODUCTION THROUGH PHYTOPLANKTON EXTRACELLULAR  
RELEASE AND THROUGH ZOOPLANKTON GRAZING

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## ABSTRACT

The dilution technique (Landry and Hassett, 1982) was modified and used to obtain field estimates in Monterey Bay, California, of dissolved organic carbon (DOC) production rates by both algal excretion and grazer release by microzooplankton. Twelve experiments were used to obtain the data herein. On the average, total DOC production was about 26.10% of total carbon fixed, DOC production by algal excretion (phytoplankton extracellular release) was about 10.94% of total carbon fixed and DOC production by micrograzer release was about 15.17% of total carbon fixed. The rate of DOC production due to grazer release was about an average of 1.35 times greater than the rate of DOC production due to algal excretion. During the course of this study, grazer release was observed to be at least as important as algal excretion for the production of DOC within the single-celled plankton community.