

## BACTERIAL PRODUCTION IN FRESHWATER SEDIMENTS: CELL SPECIFIC VERSUS SYSTEM MEASURES

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**Abstract:** Estimates of bacterial production based on total trichloroacetic acid (TCA)-precipitable [methyl-<sup>3</sup>H]thymidine incorporation and frequency of dividing cell (FDC) techniques were compared to sediment respiration rates in Lake George, New York. Bacterial growth rates based on thymidine incorporation ranged from 0.024 to 0.41 day<sup>-1</sup>, while rates based on FDC ranged from 1.78 to 2.48 day<sup>-1</sup>. Respiration rates ranged from 0.11 to 1.8  $\mu$ mol O<sub>2</sub>·hour<sup>-1</sup>·g dry weight sediment<sup>-1</sup>. Thymidine incorporation yielded production estimates which were in reasonable agreement with respiration rates. Production estimates based on FDC were 4- to 190-fold higher than those predicted from respiration rates.

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