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Watercolumn Photosynthesis and Respiration in a Marine Coastal Pond

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WATERCOLUMN PHOTOSYNTHESIS AND RESPIRATION IN A MARINE COASTAL POND

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Measurements of watercolumn photosynthesis and respiration were conducted as part of a large-scale ecosystems project by B. Howes and C. Taylor on Little Pond, a marine coastal pond, in Falmouth, Massachusetts. Methods employed consisted of 300ml BOD *in situ* light and dark bottle incubations using either dissolved oxygen techniques (Winkler titrations) or radioactive 14-carbon assimilation. Field measurements were taken on six dates throughout the summer of 1989. Samples of inorganic nutrients, chlorophyll-a, particulate carbon and nitrogen, and temperature were also taken at the times of primary production measurements. Production/Respiration (P/R) calculations indicated that the watercolumn of Little Pond was productive throughout the season, and also that the production increased significantly during the first half of August due to a phytoplankton bloom. Results also indicated a fair agreement between the two methods used to measure photosynthesis.