

FLUX 'N STOCK AROUND THE CLOCK: A 24-H SURVEY OF CARBON AND NUTRIENT DYNAMICS IN THE SPUIKOM LAGOON (OSTEND, BELGIUM)

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The Sluice Dock (Spuikom) is an artificial lagoon initially created to aid periodic cleaning of the harbour of Ostend. The poster presents results of a study conducted by an international group of students (1st year MSc in ECOlogical Marine MAnagement) mainly from developing countries. The study looked at the stocks and fluxes of carbon and nutrients in the water column of the lagoon during the spring of 2002 and the factors that determine carbon gain or loss between surface, bottom, near shore and off-shore waters. The investigation involved measurements of nutrient concentrations, primary productivity, plankton standing stocks and environmental parameters (temperature, sunlight and turbidity) over a 24-h period. Concentrations of the major nutrients were typical of highly enriched (from run-off and human influences) marine ecosystems with values ranging from 2.3-1.4 mg/m² for P, 29-16 mg/m² for Si and 149-79 mg/m² for NH₃. The study concluded that generally nutrient concentrations did not appear to vary significantly over 24-h period though there was a slight trend of higher nutrient concentrations in the early morning hours (at sunrise), which tended to decrease with day-light hours. This phenomenon was probably due to increased nutrient uptake by phytoplankton during primary production. Fluxes of carbon in the lagoon were mostly correlated with changes in primary productivity and zooplankton activity. Due to the shallowness of the lagoon and moderate surface winds, there were no pronounced vertical gradients in terms of primary production and nutrient concentrations. Generally, trends observed in the Spuikom lagoon correspond with data typically measured in shallow temperate lagoons.