Patterson, G. & Kiplagat, W.K. 1995. The influence of diel climatic cycle on the depth time distribution of phytoplankton and photosynthesis in a shallow equatorial lake (Lake Baringo), Kenya. *Hydrobiologia* 1 - 8.

Abstract

Lake Baringo is a shallow equatorial lake. This paper reports a diel study of the depth-time distribution of phytoplankton and photosynthesis at one location in Lake Baringo on 10 March 1989. The water column shows a pattern of diurnal stratification probably accentuated by the high turbidity of the water and therefore rapid attenuation of solar energy. This stratified pattern breaks down at night due to atmospheric cooling and the regular onset of winds in the early evening. The phytoplankton is dominated by*Microcystis aeruginosa* with some associated epiphytes. It concentrates in the narrow euphotic zone during the diurnal period of stratification due to buoyancy of the*Microcystis*; evening breakdown of the thermocline results in the phytoplankton being mixed throughout the water column. A series of measurements of photosynthesis throughout the diurnal period gives an areal rate of 3.8 g O_2 m^{-2} d^{-1}. The relationship between this value and the level of fish exploitation in Lake Baringo is discussed. The diel cycle in Lake Baringo is interpreted as dominating over any seasonal limnological cycle in the lake.