

Short-term dynamics of a *Melosira* population in the plankton of an impoundment in central Chile

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Relationships among the chlorophyll-specific photosynthetic behaviour of a *Melosira*-dominated phytoplankton, net variations in the quantity of *Melosira* in suspension, the rates of sinking loss of *Melosira* cells and diel fluctuations in water-column stability were investigated in Embalse Rapel, central Chile. The short study was carried out during the autumnal equinoxial period (March, 1984) of maximal *Melosira* abundance to determine the extent to which these various components might contribute to the distinctly bimodal seasonal distribution of phytoplankton abundance in this reservoir. Diurnal photosynthetic production within the illuminated layer and supposed column respiration were found to be of a similar order, suggesting that net increase through cellular growth was already substantially limited by self-shading. Thus observed net changes in the standing population may have depended more on the relative magnitude of sinking loss rates and recruitment through resuspension, which proc