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The Influence of Certain Physical and Chemical Variables on the Seasonal Dynamics of
Phytoplankton Assemblages of a Source Inlet and the Outlet of the Shallow Hypertrophic Lake
Manyas, Turkey

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Abstract: The relationships between water discharge, temperature, pH, conductivity, turbidity, nitrate, ammonium, phosphate and the seasonal dynamics of phytoplankton assemblages of one of the inlets, which is a source of waste for the lake, and the sole outlet of the shallow hypertrophic Lake Manyas, Turkey, were studied from January 2003 to August 2005. Conductivity, ammonium, nitrate, and phosphate concentrations were higher at the inlet than at the outlet. Diatoms and cyanobacteria were the dominant phytoplankton groups at both stations. *Achnantes microcephala* (Kütz.) Cleve was dominant throughout the year and *Microcystis aeruginosa* Kütz. was dominant in summer at both stations. *Planktothrix rubescens* Anagnostidis & Komarek and *Phacus pusillus* Lemmerm. were the subdominant species at Sığircı Inlet in summer and autumn. Multiple regression analysis showed that conductivity and turbidity were the best predictors of phytoplankton biovolume at the inlet and of water discharge at the outlet. The purpose of this study was to determine the relationships between certain physical and chemical variables and the seasonal dynamics of phytoplankton assemblages of a waste source inlet and the sole outlet of the shallow hypertrophic Lake Manyas, Turkey.

Key Words: Conductivity, phytoplankton biovolume, regression analysis, turbidity, water discharge

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