

Jaworska, B., Zdanowski, B., Bowszys, M., Koszalka, J. Influence of Dominance and Stability of Occurrence of Blue-Green Algae on the Mechanism of Changes in Phytoplankton Structure in Lake Kortowskie. *Ochrona Srodowiska* 2014, Vol. 36, No. 4, pp. 15–22.

Abstract: Causes and effects of changes in structure and growth of phytoplankton in Lake Kortowskie (Olsztyn, Poland) were presented, under the conditions of blue-green algae dominance and increase in their stability of occurrence. Specific adaptation abilities of the blue-green algae which could have an impact on this phenomenon, but also could be a limiting factor in occurrence and growth of other algal groups, were analyzed. Qualitative and quantitative phytoplankton analysis for Lake Kortowskie was performed and applied as a basis for the planktonic algae dominance structure and stability of occurrence determination. As a result, a significant increase in the blue-green algae stability and dominance was demonstrated. It was established that under these conditions stability level and growth of other planktonic algae groups gradually decreased. The increasing dominance and stability of the blue-green algae in the lake contributed to shifts in the taxonomic structure and affected growth rate of the entire phytoplankton assemblage. It was established that the increase in the blue-green algae dominance and stability triggered a series of complex transformations shaping the planktonic algae community. Trends in dynamics were documented during the seven-year phytoplankton studies (1987–1990, 1999, 2009, 2010) under the said conditions of increase in the stability and dominance of the blue-green algae.

Keywords: Standing waters, hypolimnion, eutrophication, adaptation.