**Summary**

Human-driven climatic changes and growing eutrophication heavily affect natural environment. They lead to habitat loss and species extinction, and therefore to loss of biodiversity, as well as, it's most important component – functional diversity. The concept of functional diversity assumes that every species bear functional traits (morphological, physiological, behavioral, life history), which outline its role in ecosystem processes, such as cycle of elements, or a manner how it interacts with other organisms dwelling the ecosystem. The loss of functional diversity caused by mentioned global changes may cause weakening of ecosystem processes.

Habitats, which are particularly vulnerable for global changes are freshwater ecosystems. It is anticipated that predicted climate change and growing eutrophication will promote (especially in northern hemisphere), more frequent cyanobacterial blooms. The predictions also assume that periods of cyanobacterial blooms persistence will be extended, and the bloom itself will be intensified (larger biomass of cyanobacteria created, higher concentrations of cyanotoxins released to the environment). This will lead to drastic deterioration of water quality, therefore having negative effects on organisms dwelling freshwater ecosystems, including zooplankton.

The aim of the dissertation was to examine the effects of cyanobacterial bloom and its intensity on particular components of functional diversity of zooplankton community of shallow water bodies. The study included analyses of relationships of functional traits of phytoplankton and zooplankton, with particular emphasis on the functional characteristics of cyanobacteria (**Article 1**), as well as dependencies between cyanobacteria biomass and density of functional groups of zooplankton (**Article 2**) and selected indexes of functional diversity (**Article 3**). Trait-based approach and analysis of changes of functional diversity allowed for detailed depiction of phytoplankton – zooplankton relationships, with emphasis on role of cyanobacteria.

Understanding of changes in organismal communities, their functional traits and functional diversity is crucial for extending the knowledge on ecosystem processes, such as cycle of elements. Recently, such approach is gaining appreciation in community ecology studies, however is limited in plankton ecology studies. My dissertation constitutes a solid contribution in development of the research topic of functional diversity of zooplankton communities dwelling freshwater ecosystems.