

## ABSTRACT

The main part of the thesis discusses the occurrence and spreading of non - indigenous species of benthic freshwater invertebrates in the Labe River and it is based on long - term physical, chemical and biological data provided by Povodí Labe, state enterprise. Our results show a decrease in the concentration of nutrients at monitored stretch of the Labe River during the time period between years 2000 and 2011. The relative richness of non – indigenous species in benthic communities was analysed by TCI (Taxonomical Contamination Index), while their relative abundance was analysed by ACI (Abundance Contamination Index). Values of those two indexes increased during the time period between years 1998 and 2012. A detailed analysis is focused on four species - *Dikerogammarus villosus*, *Corbicula fluminea*, *Jaera istri* and *Corophium curvispinum*. The highest ACI value, as well as the total abundance of *D. villosus*, *C. fluminea* and *J. istri*, has been found at the Velké Březno site. Different values of TCI and ACI indexes and different abundances of specific invasive species can be caused by diverse environmental conditions characterising the studied sites. Significant differences between physical – chemical parameters measured at specific sites has been shown by the Kruskal – Wallis test ( $\alpha = 0, 05$ ). Only the water temperature variable was found to have no significant difference between sites. The result of the Redundant analyses (RDA) says, that the substrate type has high influence on the analysed non – indigenous species occurrence. Correlation between *D. villosus* presence and gravel in the bottom substrate proves this hypothesis.

The second part of the thesis is the case study, discussing the spread of non – indigenous leech *Dina punctata* in the Otava River. This species can be also found in the Dyje River, where it has spread from the Danube basin. Presence of the species in the South Bohemian Rivers Otava and Lužnice has not yet been explained and seems to be beyond the expected spread pattern. Three series of sampling in the Otava River was made for this study and we use them as the primary source of the information about *D. punctata* presence in this river. Further analyses is based on physical – chemical data provided by the Povodí Vltavy, state enterprise.

**Key words:** Non – indigenous species, invasive alien species, water invertebrates, Labe, Otava, physical – chemical parameters, vectors of spreading, impacts on the native communities.