Macrophytes of the Ipel’ River: effect of flood to species composition and distribution

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With 4 figures and 1 table in the text

Abstract: Effects of spring and summer floods on macrophyte vegetation were studied along the Ipel’ River – a typical submontane river with regular winter/spring floods and with occasional summer floods. If we compare macrophyte vegetation in July 2000 (three months after spring flood) and July 2006 (one month after flood) then (i) total and mean number of species decreased, (ii) length of river sections without any macrophytes increased, (iii) mean mass total (MMT) of typical hydrophytes (e.g. Potamogeton crispus and Ranunculus aquatilis), some helophytes (e.g. Alisma lanceolatum, Leersia oryzoides, Persicaria hydropiper) as well as Algae fil. decreased, (iv) MMT of bryophytes (Chiloscyphus pallescens, Fontinalis antipyretica, Rhycochloris arundinacea) remained similar in both years, (v) MMT of Phalaroides arundinacea and Lemma minor increased. Decline in the mentioned species was probably due to disturbance of fine sediment. These species grew mostly in this sediment type; after summer flood it was replaced by coarser sediment and poorly rooted plants were removed. Bryophytes were not damaged by summer flood because they grew mainly on harder substrates in fast-flowing water. Generally, Lemma minor was frequent in running waters during the year and migration was typical for this pleustophyte species. In case of Phalaroides arundinacea, our results differ from those published by other authors, where this species is considered to be sensitive to floods.

Key words: aquatic plant, Danube catchment, flood disturbance, Kohler’s method, running water, Slovakia.

Introduction

Species composition and distribution of macrophytes in running waters are affected by several environmental and anthropogenic factors. Floods belong to the factors that strongly influence the structure and dynamics of plants and their communities in riverine wetlands. Duration, power and time-period of floods within the year are important. In frequently disturbed running waters, composition as well as species richness and diversity of aquatic macrophytes appeared stable. On the other hand, richness and diversity appeared to be the lowest where disturbance frequency was

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