ARE ALKALINE FENS SUITABLE HABITAT FOR CALCIPHILOUS INVERTEBRATES?

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Alkaline fens are particularly protected habitat in the EU. In Latvia, flora and vegetation of alkaline fens are comparatively well known, but data about invertebrates are fragmentary. Thus an aim of the research is to describe occurrence and influencing factors for various invertebrates in fens and to select indicator species of the habitat. Whorl snails (*Vertigo* spp.), woodlice (Oniscidea) and millipedes (Diplopoda) are discussed here.

Five fens – Kaņieris, two at Engure, Apšuciems and Platene – were selected. Five sample plots were selected in every fen, where soil and vegetation was described, and invertebrates investigated. Whorl snails were gathered by use of "litter volume sampling", woodlice and millipedes – by use of pitfall traps.

Five whorl snail species were found, including two protected species in the EU – *V. geyeri* and *V. angustior*. No definite interrelations among snail species and plant species were found. Every fen has different origin what influence a vegetation, hydrological regime and consequently whorl snail fauna. Alkaline Kaņieris fen occurred not to be suitable for these snails, probably because is not irregularly overflowing. The other investigated bogs are exposed to irregular floods as plant species composition indicates.

A distribution of woodlice was very different in the fens. Woodlice were seldom or absent in rich sphagnum fens (Hajek et al. 2006) (Kaņieris and Platene) opposite to rich brown-moss fens (the rest three fens). Two species were recorded. *Ligidium hypnorum* can establish very rich population in particular fen and is dependant on the cover of bog myrtle *Myrica gale* and presence of black alder forests in the periphery of fens. Population density of *Trachelipus rathkei* was low in fens, and it depended on rusty bogrush *Schoenus ferrugineus* cover. The species is very common in Latvia, but mostly in forests and in dry calcareous habitats. An overflowing of fens does not affect woodlice.

10 species of millipedes was found in fens. *Leptoilus proximus*, *Ommatoilus sabulosus*, *Rossiiulus vilnensis* and *Polydesmus* spp. were the most characteristic species. *L. proximus* depended on rusty bogrush cover, *O. sabulosus* – on common reed *Phragmites australis* cover. *R. vilnensis* had more specific demands to the habitat – depended on cover of birches *Betula* spp., sedges *Carex* spp. and common reed, and on bare soil not covered by vegetation. An overflowing had no significant affect of millipedes, but can influence population density.

It was concluded that not every alkaline fen is favourable for all calciphilous species.

In future, it is planned to compare alkaline fens more widely in Latvia basing on selected indicators, to analyse data from metapopulation theory approach, and to study a spatial distribution of species in a single fen.

References

Hájek M., Horsák M., Hájková P., Dítě D. 2006. Habitat diversity of central European fens in relation to environmental gradients and an effort to standardise fen terminology in ecological studies. *Perspectives in Plant Ecology, Evolution and Systematics* 8: 97-114