Habitat conditions of *Utricularia* spp. at Lower-Silesian Province in Poland

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Ecological studies of water plants (habitat conditions, ecological constitution of species and ecological organization of their populations) determine important circumstances for their active protection. This type of studies need bladderworts.

The aim of this study was to present the differentiation of habitats of bladderworts in respect of chemical features, whether habitats of different species show similarity in relation to oneself. Seventeen sites were chosen at Lower-Silesian Province (Poland). The contents of $\text{NO}_3^-$, $\text{NO}_2^-$, $\text{NH}_4^+$, $\text{PO}_4^{3-}$, $\text{K}^+$, $\text{Ca}^2+$, $\text{Mg}^2+$, $\text{Na}^+$, $\text{Fe}^{3+}$, $\text{SO}_4^{2-}$, hardness of water, humus acids and pH have been examined in the water samples. It has been stated, that sites for species are differed. This differentiation within of species is slight. Greater differentiation is between species. Investigated waters are characterized by different trophic status. They are mesotrophic, in most cases eutrophic, more seldom dystrophic.

It has been stated, that *U. vulgaris, U. neglecta* and *U. ochroleuca* exist in eutrophic waters. But *U. minor* and *U. intermedia* prefer dystrophic ones, which are characterized particularly by lower pH and higher content of humus acids. On the basis of the results using method of cluster analysis (Legendre and Legnendre, 1998; StatSoft, 2001) tree diagram was constructed (Legendre and Legnendre, 1998; StatSoft, 2001). Similarity of sites has been determined. Tree diagram shows least similarity of *U. minor* and *U. intermedia* sites in relation to the sites of remaining species of *Utricularia*.

Eutrophication and also specific chemical pollution causes stress and can be vital significance for these species. Whole populations of sensitive species could be destroyed. The results of this type of investigations should be taken into account in active protection of plants and their biotopes.

References

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