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Title:

Phytosociological affiliation of *Tephrosieris longifolia* ssp. *moravica* and two related species in the Western Carpathians

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Abstract: (max 2500 characters in length, spaces included)

Tephrosieris longifolia subsp. *moravica* is a critically endangered endemic taxon of Carpathian flora included in the European list of important species. Recently, nine localities are known and monitored (4 in the Czech Republic and 5 in Slovakia). Its occurrence is restricted to very specific and vulnerable habitats. We studied phytosociological affiliation of *T. longifolia* subsp. *moravica* in comparison with two related species, *Tephrosieris integrifolia* and *Tephrosieris crispa*, which distribution overlaps in the Western Carpathians. The main question was to determine plant communities inhabited by the studied taxa and the strength of their coenological specialization. For the analyses we used phytosociological relevés stored in the Slovak and Czech phytosociological databases. Grassland syntaxa were classified according to the electronic expert system, while other communities were classified according to the original authors.

The communities with the occurrence of *T. longifolia* ssp. *moravica* can be classified within the alliances *Bromion erecti* and *Arrhenatherion elatioris*. Some populations grow in the ecotone zone between meadows and beech forests which is difficult to classify. The coenological affiliation of *T. integrifolia* is rather broad - it was recorded in communities of the alliances *Cirsio-Brachypodium pinnati*, *Bromion erecti*, *Bromo pannonici-Festucion pallentis*, *Diantho lumnitzeri-Seslerion*, *Festucion valesiacea*, *Nardo strictae-Agrostion tenuis*, *Violion caninae*,

Geranion sanguinei and *Quercion pubescentis-petraeae*. *T. crisper* occurs mostly in communities of the *Calthion palustris*, but occasionally it grows in wetlands of the alliances *Alnion incanae*, *Cardaminion amarae*, *Caricion davallianae*, *Petasiton officinalis* and *Sphagno recurvi-Caricion canescentis*.

In summary, *T. longifolia* subsp. *moravica* has the narrowest coenological niche. The communities of *Bromion erecti* represent the habitat conditions of its potential common occurrence with *T. integrifolia*. The coenological differences of the three studied species were confirmed also by the ecological analyses of Ellenberg indicator values. There are no records of hybrids between *Tephrosieris* taxa in the relevant literature overall the distribution area of the studied taxa. They are all polyploids with $2n = 48$ and there are several possibilities of their occurrence in the same locality within the studied area. Thus the existence of hybrids cannot be ruled out.

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