

## ECOLOGY OF GRASS-DWELLING SPIDERS (ARANEAE) IN THE CALCAREOUS FENS OF THE COASTAL LOWLANDS, LATVIA

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Calcareous fens are very unique and very rare habitats in Latvia and in Europe. Moreover, they are one of the most sensitive habitats of the temperate zone. Calcareous fens have become so rare because in the past they have been drained and transformed into grasslands (Šefferova *et al.* 2008; Johansen *et al.* 2011).

In Latvia the ecology of fen spiders (as well as other fen arthropods) is very poorly known so the aim of this research was to investigate spider ecology in the several different calcareous fens that are located in the Coastal Lowlands of Latvia.

The research was carried out in 2011 and 2012. In 2011 the chosen study sites were eight calcareous fens (Apšuciems, Engure, Ječi, Kaņieris, Ķirba, Vītiņi (meadow complex), Platene and Slītere) but in 2012 – only one (Apšuciems). As a spider sampling method was chosen sweep netting which is appropriate technique for grass-dwelling arthropod collection. The dominance of each spider species was analyzed using the Engelmann's scale of dominance. To estimate spider diversity in each fen, the Shannon diversity index and species evenness were calculated. To reveal the relationships between grass-dwelling spiders and fen vegetation, the Spearman's rank correlation was used. The data were also analyzed with the Detrended Correspondence Analysis.

In terms of spiders, Apšuciems was the most diverse fen based on Shannon diversity index. The dominant spider species in all fens was the raft spider *Dolomedes fimbriatus*. Correlation analysis showed that there are significant relationships between grass-dwelling spiders and particular plant species. The most sensitive spider species was *Evarcha arcuata*, which was positively correlated with the cover of *Molinia caerulea*, *Myrica gale*, *Frangula alnus* and *Sesleria caerulea* but negatively – with *Carex lasiocarpa* and *Salix* sp. The total number of plant species had a positive effect on the spider species richness and the total number of spider individuals.

## References

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Šefferova S. V., Šeffler J., Janak M. 2008. Management of Natura 2000 habitats: 7230 Alkaline fens. Slovakia: DAPHNE – Institute of Applied Ecology, 20 pp.