

Methods for the investigations of spiders living in flooded area of Hungarian wetlands

Csaba Szinetár, Béla Kancsal & Tamás Török

University of West Hungary, Faculty of Natural Sciences, Savaria University Center, Zoological Department, 9700 Szombathely, Károlyi G. tér 4. E-mail: szcsaba.bdtf@gmail.com (corresponding author)

In the last years, research of Reeds, as typical marshland habitats, received special attention in Europe. Several national parks had been established for the preservation of these habitats, and numerous international treaties were signed to ensure their survival. In spite of the intensive efforts, our knowledge, concerning some groups of animals, including spiders live in the reeds, is still incomplete; partially due to research-methodological reasons. Although the intensive research resulted in many new findings, it could be assumed that the introduction of a new and standardizable sampling method could lead to may further valuable discoveries. Collection of ground-dwelling spiders in wetland habitats, especially in reeds is often difficult. During pitfall trap monitoring high water level often causes some troubles. We tried to eliminate this problem by developing a new type of trap which floats at the top of water. The cups which contained killing-fluid were sunk into a polystyrene plate. Upthrust of water was taken out by lead-ballasts which were fixed with plaster at the bottom of the cups. We conclude that collecting arthropods living on soil surface in reeds with floating traps proved to be more successful than with the traditional traps.

We have developed and tested an other new methods for investigating of spiders living on wetland plants (in herb layer). Field testing was carried out in the Reeds of the three largest lakes in Hungary (lakes Balaton, Neusiedl and Velence) in parallel.

The idea of this new sampling method is based on the observation that spiders and other arthropods could often be found in the cavity of broken reeds; they use these holes as hiding place, for taking care of the offsprings or as wintering place etc. We hypothesized if the amount of these naturally broken reeds is limited in the habitat then the spiders will occupy artificial broken up reed parts (opened up, strategically placed and attached to the side of the natural reed). (Analogy: artificial cavities are preferred nesting places of birds in forests with limited hollow trees).

Based on the results of the studies started in August of 2010 we can conclude:

1. Reed traps are working effectively. Their occupation varied between 28 and 85% depending on the different collection points and collection periods (summer, winter).
2. More than 80% of the collected arthropods were spiders.
3. A number of rare, habitat specialist species could be effectively detected.
4. Using this method new information could be collected concerning the phenology of reed-inhabiting species, their mating and parental care habits or the interaction of different species (joint wintering or pray-predator relationships).
5. The different zones of Reeds, differences due to different reeds management (eg harvesting, burning) and the seasonal periods (summer-winter) could be effectively and quantitatively investigated using this new method.

This research was supported by TÁMOP 4. 2.1/b grant.