An investigation of invertebrates – specialists of fen habitats

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Lowland fens can be rich, or poor, or with depressions and springs (Kabucis 2001). Invertebrates in the raised bogs are rather properly studied (Spuņģis 2008a), but in the fens – poorly. Calcareous fens are particularly protected habitat in Latvia and Europe (Habitats Directive 1992). Thus research of these habitats has a particular importance. Data on invertebrates of this habitat are biased (mostly about snails) and fragmentary (epigeic fauna in the Engure lake calcareous depressions, Čužas fen).

Habitat size for invertebrates can be very limited in area. Thus a fen covering limited area could be a favourable for establishing stable long-term population.

A number of invertebrate species – specialists of the fens – are unknown in Latvia. Epigeic fauna in the poor fens, as known, are scanty (Spuņģis 2008b); data about the other ecological groups are very limited. In the calcareous fens the number of specialists should be much higher, particularly those who need high concentration of calcium in soil for their metabolism (snails, millipedes, woodlice etc.). Less is known about adaptation of fen invertebrates to sharp changes in hydrological regime – overflowing in springs and drying in summers.

Up to know data about invertebrates (mostly snails of the genus *Vertigo*) in fens present from 15 very different territories in the whole Latvia: Čužas fen, Engure Lake calcareous depressions, Ķirba fen, Platene fen, fens of Slītere National Park, Abava valley spring fens, Motrine lake fen, Numerne fens, fen in Zvārde Nature Park, Pope fens, Apšuciems fen, Skujaine-Svētaine fen, Ječi fen, Bērzpils fen, fens around Kaņieris Lake.

A complex investigation of fens started in 2009. Apšuciems fen was selected and the following parameters were studied: soil properties; flora and vegetation; land snails; soil, epigeic and grass-layer invertebrates. A transect partly crossing the fen overgrown by Bog-rush *Schoenus ferrugineus* and partly – by Sowgrass *Cladium mariscus* was marked. An invertebrate fauna can be considered as rich. New spider species for Latvia was found (Cera 2009) and some more invertebrate species expected. It was stated that the presence of Sowgrass reduced species richness and population density of numerous invertebrates (e.g. mites, beetles, spiders, ants). Only some species have opposite distribution. Diptera dominate in the samples of grass layer. Cicadids display significant number of species (28) and individuals. Species composition of invertebrates changed during the season significantly. The optimal sampling periods and modifications of methods are proposed.

Well-known calcareous specialists – snails of the genus *Vertigo* was recorded. Proposed species who pretend to the status of indicators (indicating value of fens), namely, locusts (e.g. *Chortippus montanus*), cicadids (*Cicadella viridis* and others), beetles (e.g. *Oodes gracilis*) and others. Indicators will be further studied in more fens in 2010.

References

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