



## Auchenorrhyncha communities in Czech mining and post-industrial sites – man-made deserts or oases for threatened biodiversity?

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Anthropogenic sites such as quarries, open-cast mines, sand-, gravel- and clay pits, spoil heaps created by mining, ash and slag deposits, etc. represent common landforms in many European countries. Traditionally, such sites have been viewed negatively by ecologists and conservationists but an increasing number of studies have recently demonstrated their great potential for biodiversity conservation.

Within several projects in 2007–2013 investigating invertebrate communities in various types of mining and post-industrial sites and their response to restoration measures, Auchenorrhyncha material was collected in several regions of the Czech Republic. Despite the various nature and geographical situation of the sites studied, Auchenorrhyncha were always represented by large numbers of species and individuals, forming an important component of local invertebrate communities.

Auchenorrhyncha assemblages in mining and post-industrial sites were usually dominated by grass-feeding species. Especially fly ash deposits and sand pits with fine substrate and large proportions of bare ground were highly attractive for some species showing the "colonisation syndrome" (combination of traits such as polyphagy, macroptery and bivoltinism) and affinities to frequently disturbed sites or early successional stages of all kinds. On the other hand, in most localities and regions, we found a large proportion of species of conservation importance, representing specialists of dry grasslands, inland sand dunes, or riverine gravel beds, i.e. habitats which largely vanished from central European landscapes in the past century. At least for some of them (*Circulifer haematoceps*, *Ebarrius cognatus*, *Paralimnus rotundiceps*, *Pinumius areatus*, *Platymetopius guttatus*, *Pleargus pygmaeus*, *Psammotettix excisus*, *P. poecilus*, *Rhytistylus proceps*), quarries, sand pits, spoil dumps and fly ash deposits nowadays probably constitute major strongholds in the Czech Republic as these species are extremely rare or went extinct at natural sites. Also in mining and post-industrial sites, they are, however, threatened by technical reclamation, typically comprising covering the sites with fertile topsoil, sowing grass-herb mixtures and planting trees. Such technically reclaimed plots were generally shown inferior in conservation value for Auchenorrhyncha to plots left for spontaneous succession in our studies.



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