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Methods of Post-Mining Landscape Reclamation and Their Impact on Occurrence Hymenoptera: Aculeata and Lepidoptera

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Abstract

This study is focused on two selected model taxa of invertebrates - Hymenoptera: Aculeata and Lepidoptera with nocturnal activity, recorded at the sites of 10 lignite dumps and their surroundings in the North Bohemian Lignite Basin, Czech Republic. 3 areas were selected on each landfill – primary and secondary succession and recultivation. A total of 3,202 individuals belonging to 232 species and 17 families of sagebrush insects were collected. More than twice the number of species occurred on areas of primary succession compared to recultivation. On all areas were 60 rare species. The areas of primary succession were again confirmed to be the richest in terms of rare species.

A total of 3,634 moths were collected, assigned to 262 species and 10 families. The results show that the reclaimed areas host a numerically larger group and more species of moths than the successional areas. Rare species did not occur at any site. A higher number of days in locations without water bodies, wetland vegetation and locations with a high representation of woody species.

It is advisable to combine individual types of landscape management in such a way as to create a colorful mosaic that supports biodiversity. Primary succession proved to be important for the occurrence of rare species.

Keywords: Aculeata, primary succession, reclamation, Lepidoptera, rare species