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Hoverfly diversity in restored mining areas from Caraș-Severin County

Cristina Craioveanu*[1], Andreea Oros[2]

[1]Department of Taxonomy and Ecology, Babeș-Bolyai University, Clinicilor 5-, Cluj-Napoca, 400006, Romania, Babeș-Bolyai University, Centre for Systems Biology, Biodiversity and Bioresources 3B, Cluj-Napoca, Romania; [2]Babeș Bolyai University of Cluj-Napoca, Faculty of Biology and Geology
**Corresponding author, E-mail: cristina.craioveanu@ubbcluj.ro*

Abstract: Hoverflies play several important roles in open and semi-open ecosystems, as predators and pollinators. We assessed hoverfly diversity to explore the connections between ecosystem components in old mining areas from Caraș-Severin County, Romania. Six different representative types of habitats were investigated: protected natural grasslands that were not altered by mining activities, pastures, croplands, restored/revegetated tailing dumps, contaminated areas, and home gardens. We collected hoverflies by sweep-netting along a 100 m long transect. We hypothesised that natural grasslands would show a higher hoverfly diversity than restored tailing dumps and agricultural cropland. Overall, our results showed a low diversity with a small number of hoverfly species and a low abundance, and a hoverfly fauna composed of common, widespread species. The contaminated areas and agricultural croplands showed a lower diversity of hoverflies. On the other hand, the restored tailing dumps the highest hoverfly diversity, even compared to that of the natural protected grasslands. Between-site variation in diversity indices was particularly high in home gardens, pastures, and contaminated areas. Our study indicates that the restoration efforts started approximately 40 years ago have resulted in a stable vegetation cover with enough nectar resources to sustain a relatively high diversity of hoverflies, which is comparable to that of natural, uncontaminated grasslands.

Keywords: contaminated sites, revegetation, mining areas, hoverfly communities

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