

DATA CONCERNING THE STRUCTURE OF BENTHIC MACROINVERTEBRATES COMMUNITIES IN THE LOWER BASIN OF THE RIVER MUREȘ (ROMANIA)

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INTRODUCTION

Knowledge of the structure of benthic macroinvertebrate communities is a tool for assessing the trophic status of aquatic ecosystems, as well as an important indicator of the level of pollution frequently used in determining the quality of water bodies. The study on the structure of benthic macroinvertebrate communities took place in the Lower Mureș defile. The biological material was collected during May 2011, the sampling points being located on the course of 15 tributaries belonging to the above-mentioned basin.

MATERIAL AND METHODS

The biological material was collected from 18 sampling points (Figure 1, Table 1), using a benthic kick net with an area of 124 cm², and the mesh size of 250 μm. In the laboratory, the identification was performed, in most cases, up to the level of order, except for some groups where it reached only the

class (Oligochaeta, Gastropoda, Bivalvia), subclass (Mites) or phylum (Nematoda) level.

RESULTS AND DISCUSSIONS

Following the processing of benthos samples, 20485 individuals were identified, belonging to 14 groups of benthic macroinvertebrates. Of these, 6 are present in all sampling points, therefore with a frequency of 100% (Amphipoda, Ephemeroptera, Plecoptera, Trichoptera, Diptera, Coleoptera) (Fig. 2). In 14 of the sampling points, amphipods and Ephemeroptera recorded the highest values of relative abundance (Amphipoda - 92.28% - Valea Țiganului, Ephemeroptera - 39.18% - Valea Crăciunească), followed by Trichoptera (28.47% - Dănuleasca - 2 km upstream Cărmăzânești) and Plecoptera (12.75% - Pojoga Valley - Pojoga locality). In the rest of the sampling points, the dipterans have the highest values of relative abundance (58.18% - Troaș - downstream of the locality of Temeșești, 58.40% - Valea Almășului - downstream of Cerbia) (Fig. 3).

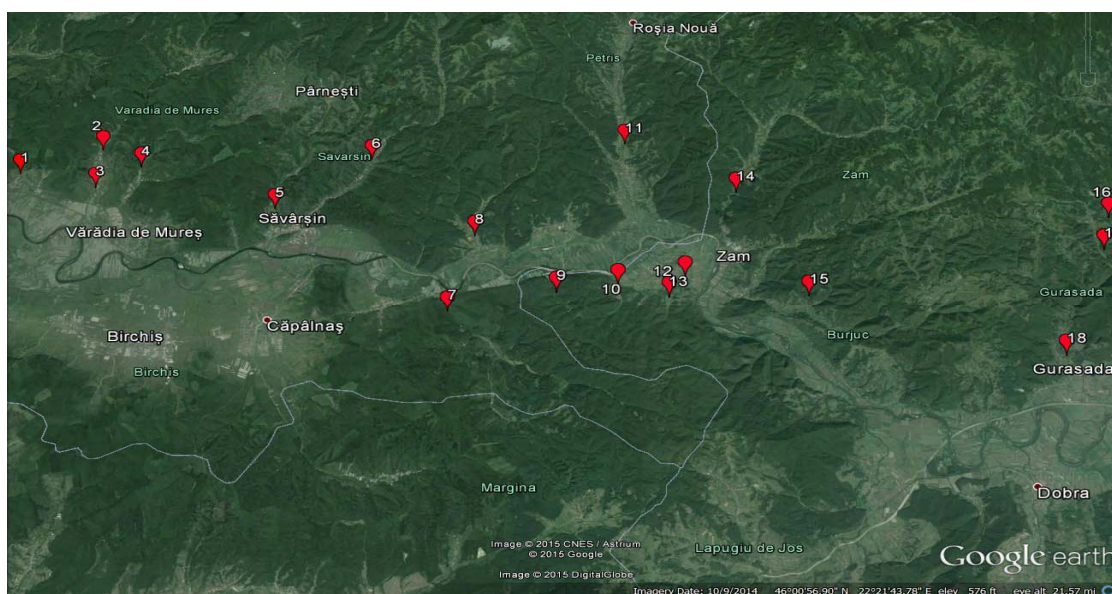


Fig. 1. Location of sampling points - Lower Mureș gorge

Table 1. Sampling points, GPS coordinates, and altitude at which samples were taken

Sampling points		GPS		Alt. (m)
1.	Vălouța Valley - locality N. Bălcescu	46° 02' 632" N	22° 05' 616" E	195
2.	Julița - 2,6 Km upstream of the village of Julița	46° 04' 966" N	22° 09' 051" E	194
3.	Julița - 1,5 Km downstream of the village of Julița	46° 01' 323" N	22° 07' 839" E	156
4.	Stejar Valley – upstream of the locality Stejar	46° 02' 858" N	22° 09' 461" E	177
5.	Vînești Valley - 4 Km upstream of Săvârșin	46° 03' 191" N	22° 14' 103" E	205
6.	Troaș – downstream of Temeșești	46° 02' 367" N	22° 15' 717" E	185
7.	Ioneasca – upstream of confluență Mureș	45° 98' 957" N	22° 33' 878" E	163
8.	Crăciuneasca Valley - 1 Km upstream of Toc	46° 01' 774" N	22° 19' 754" E	206
9.	Dinișului Valley – Pojoga quarry	45° 59' 648" N	22° 21' 171" E	154
10.	Țiganului Valley – border of the Pojoga locality	45° 59' 233" N	22° 23' 197" E	178
11.	Corbeasca Valley– upstream of the locality of Pietriș	46° 03' 517" N	22° 23' 437" E	198
12.	Pojoga Valley– Pojoga locality	45° 59' 282" N	22° 24' 118" E	166
13.	Sălcivei Valley – upstream of the village of Sălciva	45° 59' 106" N	22° 24' 641" E	186
14.	Almășului Valley – downstream of the locality of Cerbia	46° 01' 083" N	22° 26' 225" E	172
15.	Glodului Valley – upstream of the locality of Glodghilești	45° 58' 365" N	22° 29' 148" E	220
16.	Dănuleasca - 2 Km upstream of Cărmăzănești	46° 02' 120" N	22° 36' 200" E	312
17.	Dănuleasca – the Cărmăzănești locality	46° 00' 048" N	22° 37' 039" E	268
18.	Dănuleasca - 500 m upstream of the locality of Gurasada	45° 59' 022" N	22° 36' 057" E	248

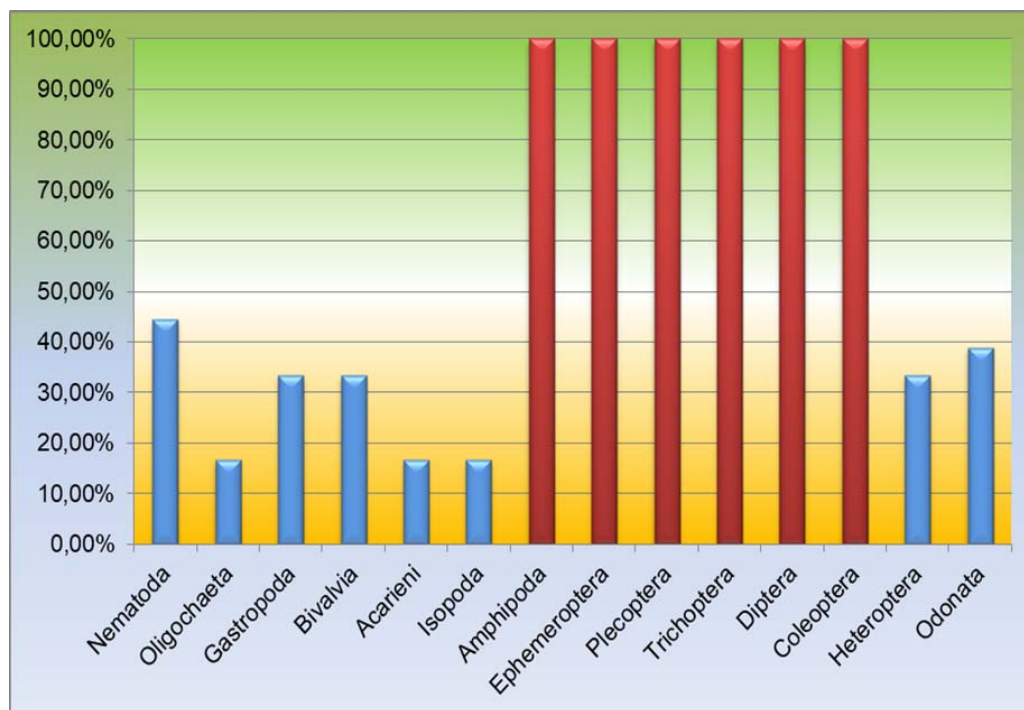


Fig. 2. Frequency of the main groups of benthic macroinvertebrates - Lower Mureș gorge

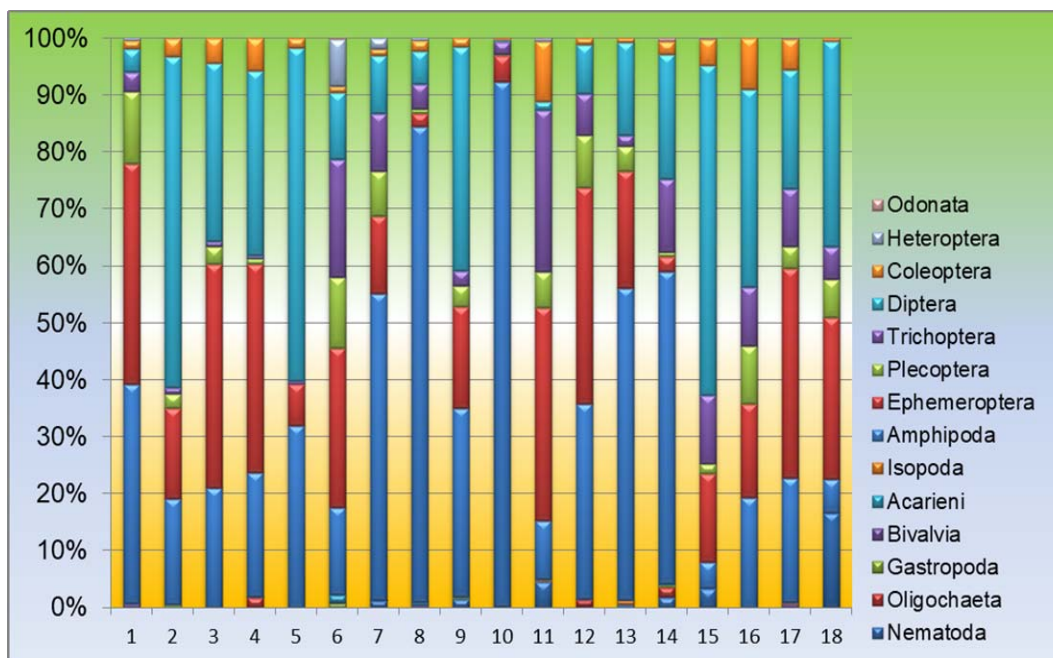


Fig. 3. The relative abundance of the main groups of benthic macroinvertebrates - Lower Mureş gorge

CONCLUSIONS

The relative abundance calculated for the 18 sampling points was supported by the presence of clean water indicator groups (Amphipoda, Ephemeroptera, Plecoptera, Trichoptera). The increase of the relative abundance of some groups of dipterans, in some sampling points located downstream of the localities, indicates the alteration of the water quality as a result of the anthropic influences on the studied aquatic ecosystem.

ABSTRACT

The study on the structure of benthic macroinvertebrate communities took place in the Lower Mureş defile (May 2011, 18 sampling points). Following the processing of benthos samples, 20485 individuals were identified, belonging to 14 groups of benthic macroinvertebrates. In all sampling points the clean water indicator groups (Amphipoda, Ephemeroptera, Plecoptera, Trichoptera) registered a high abundance.

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