



### S3.05. Zooplankton investigations in aquatic ecosystems of Lower Danube Euroregion

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During the period from March to November 2014 in aquatic ecosystems of the Lower Danube Euroregion 54 quantitative samples and 7 qualitative samples of zooplankton were collected. At the stations of the Lower Prut (Gotesti upstream, Gotesti downstream, Cahul, Slobozia Mare and Giurgiulesti) and Prut floodplain (lakes Manta, Beleu, Sovirca and other lentic ecosystems) sampling was performed in the coastal area of river. In the Lower Danube (Galati, Reni, Isaccea, Ismail, Chilia and Vilcovo) samples were collected from the boat in the middle section of the river, on its transversal profile. The main groups of zooplankton (rotifers, copepods and cladocerans) were revealed (Table 1) and the following parameters were calculated: density, biomass, species diversity and saprobic index.

Table 1. Species richness (number of taxa) and share of the systematic groups (%) in the structure of zooplankton communities

Taxonomic group	Lower Prut		Lake Manta		Lake Beleu		Lake Sovirca		Other lentic ecosystems		Lower Danube	
<i>Rotatoria</i>	17	48.6%	4	50.0%	5	29.4%	6	60.0%	5	29.4%	8	32.0%
<i>Copepoda</i>	11	31.4%	3	37.5%	7	41.2%	3	30.0%	5	29.4%	13	52.0%
<i>Cladocera</i>	7	20.0%	1	12.5%	5	29.4%	1	10.0%	7	41.2%	4	16.0%
Total taxa	35		8		17		10		17		25	

The values of zooplankton density in the Lower Prut ranged from 170 ind./m<sup>3</sup> (Gotesti upstream) to 6873 ind./m<sup>3</sup> (Giurgiulesti) and in the Lower Danube – from 357 ind./m<sup>3</sup> (Chilia) to 5173 ind./m<sup>3</sup> (Isaccea). In the lentic ecosystems the range of variation was much wider: from 783 ind./m<sup>3</sup> in Lake Manta to 92480 ind./m<sup>3</sup> in the pond of Prut floodplain. Fluctuations of zooplankton biomass depended on taxonomic structure, these having wide variations in both lotic and lentic ecosystems.

In the Lower Prut the dominant complex of zooplankton includes species as *Mesocyclops oithonoides* Sars G.O., *Mesocyclops crassus* Fischer and *Eucyclops serrulatus* Fischer of copepods; *Brachionus quadridentatus* Hermann, *Keratella quadrata* Müller, *Filinia longiseta* Ehrenberg and



*Asplanchna priodonta* Gosse of rotifers; *Chydorus globosus* Baird, *Chydorus sphaericus* Müller and *Daphnia longispina* Müller of cladocerans. Such species as *Microcyclops gracilis* Lilljeborg and *Acanthocyclops vernalis* Fischer of copepods, as well as *Brachionus budapestinensis* Daday and *K. quadrata* of rotifers are dominating in zooplankton communities of Lower Danube. In the lake Manta most common species are *Brachionus calyciflorus* Pallas and *B. quadridentatus* of rotifers, while in the lake Beleu – *Cephalodella gibba* Ehrenberg and *B. nilsoni* Ahlstrom of rotifers as well as *Moina macrocopa* Straus of cladocerans.

For a saprobiological assessment of the monitored ecosystems, species richness was analyzed as a function of saprobity. Out of 35 identified taxa of the Lower Prut zooplankton, 24 species (69%) are indicators of saprobity. Most of them are representatives of  $\beta$ -mezasoprobe area. Of the 25 taxa identified in the Lower Danube, 12 species (48%) are indicators of saprobity. In these communities the most indicators are representatives of  $\beta$ -mezasoprobe and  $\alpha$ - $\beta$ -mezasoprobe areas.

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