



### S3.07. Macrozoobenthos of the Lower Danube (summer – autumn 2014)

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During the study the aquatic ecosystems, in the course of an international expedition of the project MIS ETC 1676 «Cross-border interdisciplinary cooperation for the prevention of natural disasters and mitigation of environmental pollution in Lower Danube Euroregion» (Romania, Ukraine, Moldova) two joint trips were carried out in the Lower Danube in summer and autumn period. Samples were taken according to standard methods, fixation was made on board, and the processing of samples was done in the coastal laboratories. The soils of the study area were characterized as silt-clay, and in some areas with sand. In June 2014 the regions of Isaccea, Izmail and Chilia were studied. In the quantitative samples of macrozoobenthos 15 taxonomic units were registered. The most numerous species were the representatives of Crustacea (5 species), Mollusca - 4 species, Insecta-Ectognata larvae - 4 species, Vermes – 2 taxa. In October samples were taken in the regions of Galati, Isaccea, Reni, Izmail, Chilia and Vilково. The highest species diversity were registered for Mollusca - 9 species, Crustacea – 3 species, Insecta-Ectognata larvae – 3 species, Porifera – 2 species, Vermes – 1 taxa.

In summer period 100% occurrence was noted for mollusk *Lithoglyphus naticoides* (C. Pfeiffer, 1828), with the highest abundance and biomass was registered in the area of Isaccea (1550 ind\*m<sup>-2</sup> and 6.2 g\*m<sup>-2</sup> respectively), for larvae of *Chironomus plumosus* (Linnaeus, 1758), with the highest abundance in the area of Izmail (400 ind\*m<sup>-2</sup> and 0.7 g\*m<sup>-2</sup>), and for worm *Oligochaeta* sp., with the maximum of quantitative indicators in the area of Chilia (4650 ind\*m<sup>-2</sup> and 9.3 g\*m<sup>-2</sup>). Occurrence of 66% was noted for mollusk *Dreissena polymorpha* (Pallas, 1771), insect larvae *Cryptochironomus* sp., *Cryptochironomus defectus* (Keiffer, 1913), crustacean *Paramysis lacustris* (Czerniavsky, 1882). The last one is the endemic species of Ponto-Caspian basin, it was registered in the areas of Isaccea and Izmail (average abundance 20 ind\*m<sup>-2</sup> and 0.15 g\*m<sup>-2</sup>). The highest species diversity was noted in the area of Chilia, where 10 taxa of macrozoobenthos were registered, the lowest one was in area of Izmail (6 taxa of macrozoobenthos).

In the autumn period 100% occurrence was noted only for *Lithoglyphus naticoides* (C. Pfeiffer, 1828), the maximum of quantitative indicators was registered in the areas of Isaccea and Izmail (average abundance 450 ind\*m<sup>-2</sup> and 3.5 g\*m<sup>-2</sup>). The occurrence of 50% was registered for *C. plumosus* larvae, the maximum of quantitative indicators in the area of Isaccea (400 ind\*m<sup>-2</sup> and 1.1 g\*m<sup>-2</sup>). The occurrence of 33% was noted for *Aeschna* sp. larvae, the maximum of quantitative indicators in the area of Isaccea (200 ind\*m<sup>-2</sup> and 0.4 g\*m<sup>-2</sup>). Occurrence of other taxa varied from 17 to 20%. As in the summer period Chilia area was characterized by the highest species diversity (10 taxa). In the area of Reni 7 taxa were registered, in the area of Isaccea 5 taxa, 3 taxa in the areas of Galati and Vilково and 2 taxa in the area of Izmail. Totally, in the study area detritophages dominated, in the summer period their share was 83%, in the autumn period 61%. The share of filtrators was 4-5% in the summer period and 10-20% in the autumn period. The predator species were registered in several areas, their share varied from 2 to 17%.

Our research has shown that benthic communities are in unstable state, as evidenced by the diversity indicators and quantitative characteristics. The best environmental conditions for the development of benthic communities were noted in the areas of Chilia and Reni and the most strenuous conditions in the benthic areas of Vilково, Izmail and Galati.

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