



“Gheorghe Asachi” Technical University of Iasi, Romania



TOOLS FOR ASSESSING DANUBE DELTA SYSTEMS WITH MACRO INVERTEBRATES

Catalina Stoica^{1,2*}, Stefania Gheorghe¹, Jana Petre¹, Irina Lucaciu¹, Mihai Nita-Lazar¹

¹*National Research and Development Institute for Industrial Ecology-ECOIND 71-73 Drumul Podu Dambovitei,
Bucharest, Romania*

²*University of Bucharest, Faculty of Biology, Department of Systemic Ecology and Sustainability, 91-95 Splaiul Independentei,
Bucharest, Romania*

Abstract

This study, analyzes the benthic macroinvertebrates community structure and composition in order to assess the ecological status as required by the Water Framework Directive (WFD). Macroinvertebrates are the appropriate indicators to describe habitat heterogeneity and the water bodies ecological status by turning the allochthonous material into biomass, which is then transferred to the upper trophic levels. Moreover, the macroinvertebrates have the capacity to integrate in their structure the effects of environmental pressure at a temporal and spatial scale. In this particular case, the spatial scale is represented by the Danube Delta, Saint (St) Gheorghe Branch with a length of 112 km, carrying 22% of the Danube flow. The samples include all the organisms life cycle and were collected each month from July to October 2012. The structure and composition of macroinvertebrates were the main target of this study. Furthermore, the structural response of macroinvertebrates to environmental pressure was characterized by quantitative and qualitative analysis.

Also, the ecological status was assessed by a surface water bodies methodology in accordance with WFD. This present study brings new information of the benthic community structure and dynamics, reflects the long-term effect of environmental pressure, and it is an effective tool for evaluating integrative ecological status of lotic aquatic systems.

Key words: Danube Delta, Water Framework Directive, ecological status, macro invertebrates

Received: March, 2014; Revised final: August, 2014; Accepted: September, 2014
