

**LONG-TERM ASSESSMENT OF DANUBE RIVER WATER QUALITY BEFORE ITS
DISCHARGE INTO THE DANUBE DELTA**

**Mihaela Timofti, Catalina Iticescu, Madalina Calmuc, Valentina Andreea Calmuc, Adrian
Rosu, Maxim Arseni, Lucian P. Georgescu**

**Faculty of Sciences and Environment, European Center of Excellence for the Environment,
"Dunarea de Jos", University of Galati, ROMANIA**

Contact author: timoftimihaela@gmail.com, mtimofti@ugal.ro

Abstract: Considering the fact that a pan-European interdisciplinary research infrastructure is envisaged to be built in the near future with the aim of substantiating the integrated management of freshwater and seawater systems, special attention is paid to the quality of the water in River Danube which flows into the Black Sea through a delta.

The scientific results obtained in the framework of a series of support and research projects will represent the basis for integrated solutions suggested with respect to the management of freshwater - seawater systems as a whole.

One of these projects, which was active in 2018, evaluated the Danube water quality, both chemically and physico-chemically, over a distance of approximately 75 km, in 15 points which were set up so as to cover both the confluence area with two other major rivers of Romania and the predeltaic area.

This paper presents the results obtained by comparing the values which were obtained in 2018 with those obtained 10 and 20 years ago, respectively, for one of the 15 sampling points, i.e. for the point situated between two major confluences of River Danube with River Prut and with River Siret. Since the number of indicators studied over the 20-year period differs to a great extent (29 in 2018, 23 in 2008 and 19 in 1998), only 17 quality indicators, which were common throughout this 20-year period, were taken into consideration. The present study revealed the fact that the pH of the Danube River water increased, in some cases, by one point in 2018 as compared to the values obtained 20 years ago. Significant differences were also found for other indicators, differences which could indicate a decrease in the self-draining capacity of this river. This decrease may be an alarm signal for the water quality of the Danube Delta, a delta which has been a UNESCO heritage since 1991.

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