



The Impact of the Danube River Mouths Geomorphological Processes on the Ecosystem, Coastal Development and Regional Navigation

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The anthropogenic influences on the Danube Delta Coast, with major effect on the evolution of its littoral processes are represented by the perturbation of the longshore sediment transport, due to coastal constructions, and as well due to the decrease of solid discharge, as a consequence of the hydro-technical works/dams extension in the reception basin, as well in the main course of the rivers.

Certain vulnerable areas of the Danube Delta Coast are strongly influenced by inland works/development as well as Danube flow regime, at regional and local scale.

In the Sulina arm area, the extension of the channel jetties had a double effect, representing the cut-off of the south coast current, carrier of a portion of the solid load on the Chilia arm, and removal of its own load out of the coastal circulation in the offshore currents.

The sand dunes dynamics including the sediment changes between submerged shore and dunes system are major issues within the channel entrance. The work presents the results on the impacts of the coastal geomorphological processes of the Danube Delta on navigation and ecological areas. Thus, the variability of the sea-land interface, for a period of several decades, has been revisited on the basis of the historical maps, coastal survey of emerged beach profiles, sand dunes and recent GPS measurement, developed on the Romanian Danube Delta littoral, together with certain impact assessments in the delta areas, including the ecosystem response to shoreline variability, sediment transport on short and medium term, in the context in which the major factor is the Danube discharge, as well the sea-level rise.