



The Danube Delta: back to nature through international cooperation

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Danube Delta, Northern river channel to Chilia-Veche.
(photo: Robbert Misdorp)

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Summary

Since the second half of the XIXth Century, the Danube Delta has suffered significant changes as a result of human interventions. In order to solve navigation problems at the river mouths – and straighten the waterway, humans expanded and intensified their actions, which altered the natural state of the delta. The most significant changes were made during communist times, when the survival of the delta itself was threatened. The change in the political regime has fortunately reversed this type of human intervention.

After establishing the UNESCO Danube Delta Biosphere Reserve (DDBR), there have been large scale and long term international projects undertaken for the restoration of the natural state and equilibrium in the delta. The Netherlands provided assistance in monitoring the biological, chemical and physical processes supporting the management of the DDBR Administration. Spatial planning in the delta, zoning, including the creation of buffer zones and strict management have been effective tools for restoration.

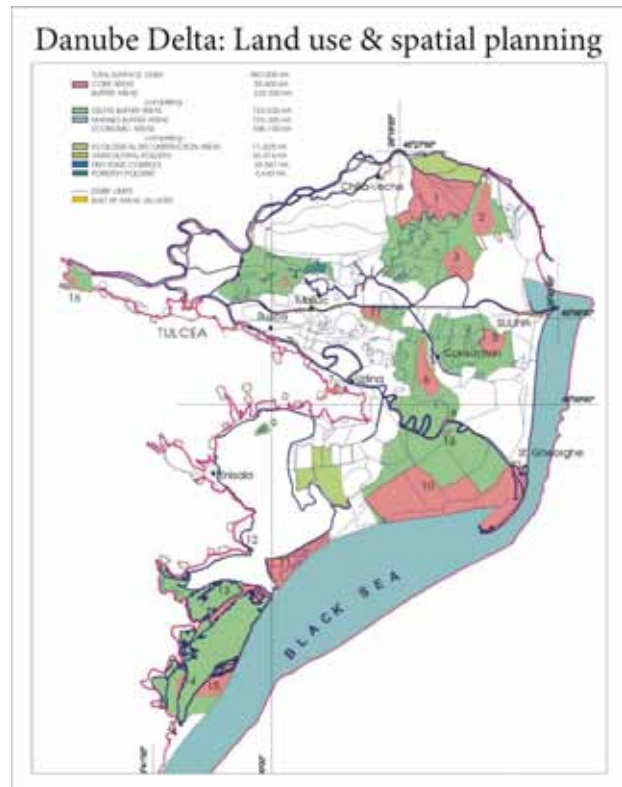
The delta coast suffered from and still endures coastal erosion due to human intervention.

New concepts of coastal dynamics, such as coastal sediment circulations cells, increase insight into coastal erosion processes and contribute to finding adaptive solutions.

Large-scale international cooperative projects have brought best practice knowledge to the assessment of coastal processes, ICZM plans and adaptive responses to global changes.



The Danube Delta Coast.
 Introducing the concept of coastal sedimentary cells (in orange: the southern cell and in yellow: the northern cell) along the Danube Delta coast between Sulina and Cape Media contributes to finding adaptive responses. (EU projects: EUROSION and CONSCIENCE). Better understanding of coastal processes provides more sustainable solutions. (source: Ministry of the Environment and Forest)



Land use map and spatial planning of the Danube Delta Biosphere Reserve. The reserve (580,000 ha) is delineated by the red line. Spatial planning is an important tool for integrated management and sustainable development of areas; it provides a coherent view valuable for addressing future global change. The main areas identified are :
 • Pink/red – strictly protected areas (nature sanctuaries).
 • Green – buffer zones.
 • White – traditional economic use areas (for fisheries, reed harvesting, eco-tourism).
 • Light green – areas in need of ecological reconstruction.
 ‘The marine part of the Danube Delta coastal zone is also considered as a buffer zone.’ (source: Danube Delta Biosphere Reserve Administration, www.ddbra.ro)



The southern Danube Delta coast - highly dynamic: a tornado approaching the Razim spit between Sf Gheorghe and Cape Media, a phenomenon that may occur more often in the future. (photo – near the former outlet of Lac Razelm: © Laur, Google Earth, 2007)