

HUMAN PRESSURES ON THE DANUBE FLOODPLAIN WITH REGARD TO FLOOD CONTROL

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ABSTRACT

Along its 2860 km length the Danube crosses densely inhabited areas with intensive agriculture, large-scale industries and well-developed communication networks. All these result in environmental pressure of considerable extent on its floodplain. Along the Hungarian Danube section the variable hydrological and geomorphological conditions make the river's response to human impact rather differentiated. Flood control problems are also manifested in a different way along upper and lower river reaches. On entering the Carpathian Basin the Danube builds the extensive Csallóköz-Szigetköz alluvial fan, where the environmental conditions have been fundamentally changed by the construction of the Gabčíkovo Barrage. Energy generation, navigation, flood control, farming, forestry, and nature conservation are the major land uses competing for river water. Since the Nagymaros counterpart of the barrage has not been built, navigation problems along the next, W to E flowing section are not yet solved. Pollutants below the confluences of the Váh and Hron rivers settle on the floodplain and the Hungarian industrial belt along the river (e.g. red mud storage and oil refining at Almásfüzitő) also presents a major source of pollution. In the Danube Bend tourism and nature conservation have a great impact on the riparian environment of the incising river. The industries in the outskirts of the capital are major polluters. Water supply to a city of almost two-million population is difficult to ensure during flood conditions. Along the N to S reaches downstream Budapest the stabilization of right-bank steep loess bluffs with landslide hazard and the flat sections with flood hazard are typical. The lowermost Hungarian section (the environs of Mohács) have ever been seriously hit by floods. Renaturalization of the river course may offer a solution. Another issue here is the revitalization of the traditional floodplain economy, forced to disappear in the wake of flow regulation in the second half of the 19th century. Recent floods called attention to levee security, water supply and nature conservation issues, which are to be solved in international cooperation.

Key words: Hungarian Danube, floodplain, human impact, renaturalization.