

FLOOD RISK ASSESSMENT FOR THE PRUT RIVER HYDROGRAPHIC BASIN IN ROMANIA

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Abstract

The eastern part of Romania is frequently affected by floods. The flood regime in the Prut river catchment is characterised by short, high intensity rainfall, coupled with low infiltration in the soil, that lead to flash floodings in the upland areas. The upper catchment is controlled by the Stanca-Costesti reservoir that greatly influences the flow regime and decreases significantly the flood risk for the downstream areas. Significant floods were recorded during 2005 – 2020, with historic maximum flows and total volumes. Through successive discharges of different downstream flows, safe transit of volumes was achieved, without endangering downstream objectives. This paper presents a comparative study of the maximum flows registered at the hydrometric stations and flood propagation times between the successive control sections. In order to maintain the safe operation of the defense lines on the Prut River (the dykes), the personnel of Water Basinal Administration Prut – Barlad carried out immediate interventions at the critical points highlighted on the embankment network (infiltrations, erosions, areas under the projected elevation, under passages), depending on their seriousness and their negative effects. This paper can be used to further improve the existing basinal flood defence plans.

Key words: catchment, high intensity flood, river warning levels, hydrograph