

Transport of suspended sediment by the Vistula River basin upstream of Kraków, southern Poland, and the human impact during the second half of the 20th century

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Abstract The upper part of the Vistula River basin, upstream of the city of Kraków (7524 km²), southern Poland, represents an area where human activity has had a major impact on the rate and long-term trend of suspended sediment transport by rivers. During the 1950s and 1960s, the studied stretch of the Vistula River received increasing volumes of wastewater from industrialised and urbanised areas, primarily via its tributary the River Przemsza, which runs through the Upper Silesian Industrial Basin. These inputs subsequently reduced. At the same time, the transport of suspended sediment by other tributaries was declining due to reforestation and construction of new dams. Below the confluence of its three largest tributaries, the main river becomes overloaded with suspended sediment, largely of anthropogenic origin, and this rapidly accumulates within the embanked zone, especially along the two reaches where the river level is raised by several metres, due to impoundment.

Key words suspended sediment; sediment loads; human impact; Upper Vistula River basin; southern Poland