



Distribution of erosion and accumulation zones in relation to valley morphology, a case study from the flood on the Kwisá river on 7 August 2006 (Sudetes, SW Poland)

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Valley floors in the Sudetes Mountains are transformed by extreme fluvial processes with the frequency of at least 15-25 years. These events occur during spring thaws and summer heavy rainfalls, intensity of which could be in excess of 200 mm/day. Increasing stream power causes bedload transport. Geomorphological effects of floods and distribution of erosion and accumulation zones depend on flow magnitude, local terrain structure, changes in longitudinal stream profile, channel sinuosity, human influence and other factors.

In this study geomorphological changes in the upper 25 km long section of the Kwisá river (tributary of Bobr river, Odra catchment) after a local flood on 7 August 2006 are analyzed. Kwisá river flows across two different types of terrain in this area, the Izera Mountains and the Mirsk basin. There exist embankments and buildings along the channel in the lower part of river.

An analysis of distribution of erosion and accumulation zones based on the field mapping of flood produced landforms, aided by the use DEM model (30 m resolution), GIS tools, geological maps 1:25 000 and topographical maps 1:10 000 to this work. Finally, it shows relations of erosion and accumulation zones to local widening of valley and relations of bank erosion to channel sinuosity and bank structure along Kwisá river. The most intensive bedload accumulation could be caused by human interference in river channel.