



## Flood marks of the 1813 flood in the Central Europe

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In August 2013, 200 years have passed since the greatest and most destructive floods known in the Slovak river basins. The flood affected almost the entire territory of Slovakia, northeastern Moravia, south of Poland. River basins of Váh (Orava, Kysuca), Poprad, Nitra, Hron, Torysa, Hornád, upper and middle Vistula, Odra have been most affected. The aim of this paper is to map the flood marks documenting this catastrophic flood in Slovakia.

Flood marks and registrations on the 1813 flood in the Váh river basin are characterized by great diversity and are written in Bernolák modification of Slovak, in Latin, German and Hungarian. Their descriptions are stored in municipal chronicles and Slovak and Hungarian state archives. The flood in 1813 devastated the entire Váh valley, as well as its tributaries.

Following flood marks were known in the Vah river basin: Dolná Lehota village in the Orava river basin, historical map from 1817 covering the Sučany village and showing three different cross-sections of the Váh river during the 1813 flood, flood mark in the city of Trenčín, Flood mark in the gate of the Brunovce mansion, cross preserved at the old linden tree at Drahovce, and some records in written documents, e.g. Cifer village.

The second part of the study deals with flood marks mapping in the Hron, Hnilec and Poprad River basins, and Vistula River basin in Krakow. On the basis of literary documents and the actual measurement, we summarize the peak flow rates achieved during the floods in 1813 in the profile Hron: Banská Bystrica. According to recent situation the 1813 flood peak was approximately by 1.22 m higher, than the flood in 1974.

Also in the Poprad basin is the August 1813 flood referred as the most devastating flood in last 400 years. The position of the flood mark is known, but the building was unfortunately removed later. The water level in 1813 was much higher than the water level during the recent flood in June 2010.

In Cracow the water level was by 38 cm lower in May 2010 than during the 1813 flood, but by 5 cm higher than in 1903, and also higher than all the other catastrophic floods that hit Cracow during the last 200 years.

The analysis of documentary information is a contribution to the growing pool of material on pre-instrumental floods in Central and Eastern Europe. The long-term flood records may reduce uncertainty in hydrological analyses and contribute to reducing losses of human lives and property. Some historical cases may be used as analogues of the recent floods and very well documented recent events are important for complex understanding of similar past floods

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