

Changes of Flood Risk on the Northern Foothills of the Tatra Mountains

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Abstract

The present paper reviews selected outcomes of the FLORIST project devoted to flood risk in the region of the northern foothills of the Tatra Mountains in Poland and summarizes novel results. The project encompassed theoretical, field, and modeling work. It was focused around observation-based hydroclimatology; projections for the future; dendrogeomorphology; as well as influence of transport of large wood on fluvial processes. The project improved understanding and interpreting changes in high-flow frequency and magnitude as well as changes in flood risk in the region, related to the presence of large wood in mountain streams. A unique database on past episodes of intense precipitation

and flooding was created, harnessing multiple sources. The project showed that the analysis of tree rings and wood logs can offer useful information, complementing and considerably enriching the knowledge of river floods in the region of northern foothills of the Tatra Mountains. Retrospective and scenario-defined modeling of selected past fluvial events in the region was also performed.

Key words: flood risk, flood hazard, Upper Vistula Basin, Poland.

Full text is available at

<https://link.springer.com/article/10.1007/s11600-017-0075-0>