

ABSTRACT:

The main task of this diploma thesis is to evaluate function of system of open drainage channels and its impact on runoff from Tetřivčí brook forest catchment in Šumava mountains region, upper basin of the Blanice River. Catchment area is only 1,62 km² and total length of all channels is over 12 km, so it's very important feature of this catchment. The first task was to explore to explore all the channels and set them to the map. Most of used data were measured manually, only precipitation and water level in main stream were measured by automatic gauges. It's not possible to compare results with state without channels, what is the main obstacle for data analysis. Measured channels normally contribute to total catchment runoff by 6 % to 39 %. About 20 % of channel length participate in runoff process in dry periods, in wet periods it can be even 90 % of channel length, what indicates functionality of drainage system. Actual soil saturation in the catchment is very important factor, it's expressed either by index API 5 (based on precipitation) or by groundwater level in 5 measured in separate drills. It's proved by channels responses in well-saturated periods. Runoff in measured channels raises up significantly after even very small precipitations of 1,7 mm. All results are suggesting, that total runoff volume is increased by drainage system, especially during significant rainfall-runoff events.