Abstract

Changes in the hydrological cycle are one of the expected impacts of climate change. Until recently, Central European mountain ranges have not been considered to be affected by water scarcity. Nevertheless, recent years have suggested an increasing risk of drought occurrence also in these regions, which have a major impact on the water supply to rivers that drain them. The master thesis deals with the evaluation of hydrological drought in the headwater areas of three catchments in the Ore Mountains for the period from 1967 to 2018. The main aim is to compare the of hydrological drought characteristics in the catchment areas of upper Svatava River, upper Rolava River and Načetínský brook based on available hydrological and climatic data. In connection with this, the work aims to detect the long-term trends of drought occurrence in selected basins. Furthermore, the emphasis is given on the evaluation of natural conditions, especially the historical and current land cover changes in the study catchments. The results point to a significant change in the seasonality of the occurrence of hydrological drought in the second half of the studied period, when the streamflow deficits concentrate between August and October. Furthermore, increasing trends in deficit volumes were found in the catchment areas of the upper Svatava River and Načetínský brook. The upper Rolava River basin shows significant differences in the resulting values of indicators and trends. In the selected period, there is a significant decrease in average and minimum flows in spring and summer months.

Key words: rainfall-runoff regime, hydrological drought, water retention, peat bog