Abstract

This thesis deals with the signs and impacts of the hydrological drought in the Rakovnicky stream basin. Its aim is to evaluate trends of the selected hydroclimatic variables, to analyze drought periods and land cover changes as one of the factors influencing a runoff regime in the catchment. The main methods used for the long-term and seasonal trends are Man-Kendall test, IHA analysis, flow duration curves and mass curves. Dry periods are evaluated based on Streamflow drought index (SDI), Low Flow index and runoff Q95 exeedance. Land use changes are analyzed using historical maps and index of change. Basic indices of ecological stability are calculated. According to the results the frequency and intensity of the hydrological drought in the Rakovnicky stream basin is increasing. Although the amount of a rainfall is consistent, its distribution throughout the year is changing. In addition the constantly increasing temperature and land use changes cause a significant runoff decreasing. To improve a water retention capacity in the cathment, it would be convenient to apply adaptation measures in the river channels and floodplains.

Key words: rainfall, runoff, drought, ecological status, Rakovnicky stream