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Impact of different canopies on soil water regime changes of wetlands

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Kláštorské lúky wetland as a part of Veľká Fatra National Park, Central Slovakia is typical for its specific biotop system, due to groundwater level close to the soil surface. During the last decade, the groundwater level (GWL) considerably decreased.
The possible reason of it can be invasion of common reed, over original, protected vegetation cover represented by the associations of the rare grass. These reasons can evoke the change of the groundwater level and subsequently the soil water regime (SWR) change in this area. From that reason it was decided to evaluate the soil water regime for the mentioned vegetation covers separately.
The appropriate method of the soil water regime evaluation (in the case when the monitoring data are lacking) is mathematical simulation. The mathematical model HYDRUS ET and GLOBAL was used for solving this problem. The influence of different vegetation cover (grass versus reed) to the GWL and to the soil water regime during the season was calculated.
The differences in evapotranspiration courses and components of their structure during the vegetation period were identified, but not significant. The decisive influence to groundwater level is caused by precipitation infiltration as well as infiltration from nearby flowing River Turiec. It can be stated, the differences in groundwater levels courses observed, were not the result of different canopies due to management practices, but are probably related to the global changes of the environment.