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### **Soil and Water Research**

**Soil water retention and gross primary productivity in the Zábrod area in the Šumava Mts.**

**Š í M., Lichner Ľ., Tesař M., Krejča M., Váchal J.:**

**Soil & Water Res., 3 (2008): S130-S138**

[ **fulltext** ]

The synergy between the hydrologic extremes, plant transpiration, gross primary productivity, and soil water retention was studied in the experimental area Zábrod – Meadow in the Šumava Mts. (Bohemian Forest) during the vegetative seasons of 1983–2000. The heat balance, potential and actual transpiration, entropy production and gross primary productivity were evaluated. It was found that the global radiation, precipitation amount, and soil water retention are the crucial factors determining the hydrologic pattern and gross primary productivity. Insufficient soil water retention leads to low entropy production by evaporation and low gross primary productivity, which results in the extremalisation of the hydrologic cycle. On the other hand, in the case of sufficient soil water retention, high entropy production by transpiration and high gross primary productivity lead to the stability of the hydrologic cycle.

**Keywords:**

hydrologic cycle; evapotranspiration; gross primary productivity; entropy

production, soil water retention

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