

**WATER RETENTION IN THE PRESERVED LUŽNICE RIVER FLOODPLAIN,
CZECH REPUBLIC**

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To increase a water retention in the landscape is an important issue in a flood prevention strategy, water quality and self-purification, non-renewable nutrient loss, and water cycle in a global climatic system. Lack of quantitative data supporting the retention potential of natural wetlands was a challenge for us to focus on this problem in a preserved part of Lužnice river floodplain, south Bohemia, Czech Republic.

Lužnice river floodplain is still an active ecosystem complex of meandering river and hundreds of alluvial waters, both permanent and temporary, with periodical flooding activity. Such a preserved alluvium has become a rare phenomenon in Central and Western Europe.

To estimate the retention, we used:

1. The classical hydrologic approach based on daily discharges at the inflow and outflow from the studied area.
2. The estimates of transpiration and evapotranspiration from the floodplain based on vegetation types and infra-red remote sensing
3. The estimate of water adsorption in the soil
4. The estimate of retention volume in standing waters, periodical depression and overall area of the floodplain.

We tried to combine these processes into one model and analysed several particular flood waves (peaks of discharge overreaching the river-bed capacity). The smaller the event was, the larger the proportion of processes 2 and 3 was calculated. The retention potential of this preserved floodplain was compared to a degraded river floodplain with regulated river bed and reservoirs.