RETENTION EFFECT BY OPTIMISED RIPARIAN FOREST

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In the frame of the Integrated Rhine Programme retention basins of different types and sizes are planned. The aim of the measure south of Breisach consists in the creation of a retention volume of 25 m³ by dredging the flood-plain. The riparian forest that results from natural succession will increase the retention effect which is obtained by a certain density and nature of the bushes and trees. However, this configuration of vegetative elements is not known so far.
Thus, already existing riparian forests at different stages of natural succession along the River Rhine were mapped under hydraulic aspects. The applied procedure will be presented and explained with the aid of examples. Furthermore, the resistance of the different riparian forests was calculated under idealised flow conditions and a forest of maximum retention effect was derived. The data were compared with the results from field measurements and incorporated in a 1-d steady state numerical model for the prognosis of the planned measure.