Riparian zone water supply and its consequences in the Kaszó forest

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Forests in riparian zone forests as agroforestry systems are very important ecosystems. As a buffer zone they protect a stream system against stress factors (both quantitatively and qualitatively). On the other hand, these ecosystems are very diverse, and the biological production of these forests are high; therefore, they are valuable from an economic viewpoint as well.

Water scarcity for a prolonged period can degrade these ecosystems (reduction in the number of species, a decrease in productivity). With reasonably designed water supply systems, unfavourable processes can be stopped, and valuable ecosystems can be preserved.

The effect of the water supply was analysed in Kaszó forest (Somogy county, Hungary). In case of 18 experimental plots were selected for monitoring in different forest ecosystems. The groundwater monitoring data were analysed with two main methods: a double mass curve approach and a spatial and temporal difference based one. Results from both methods showed that the intervention (water supply) had a positive effect on the water table.

For three selected representative locations, a more detailed field monitoring was done (meteorological, soil, groundwater and phenological measurements) and using this dataset a 1-D Hydrus model was successfully calibrated.