



## **Anthropogenically altered runoff processes in a slope bog characterized headwater catchment**

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Headwater catchments within the National Park Hunsrück-Hochwald, located in SW-Germany, are characterized by slope bogs and waterlogged soils. Runoff processes in these catchments are severely altered due to a dense network of ditches that was established during forestry operations in order to utilize these waterlogged areas. Hereby, water retention is reduced, as interflow is converted into superficial and therefore fast runoff. Apart from that, sinking water tables eventually restrict peat moss growth leading to a loss of ecologically significant habitats.

The aim of this study is a quantitative investigation of runoff processes and dynamics using a dense water gauge network and GIS analyses. These measurements shall provide a deeper understanding of disturbed water retention and potentially occurring dry spells during warmer periods. Additionally, results of this study serve as an instrument for rewetting actions taking place, mostly clogging of ditches, as they allow spatially and temporally high resolved statements about the influence of drainage networks in wetlands.

Results of the water years 2016 - 2017 and exemplary heavy rainfall events show that runoff reacts quickly to precipitation. Apparently, there is also a strong correlation between ditch network density and shortened response time. The magnitude of runoff recession - even in short dry spells - leads to the conclusion that the already residual slope bogs are endangered, as the extensive soil water storage is drained.