

## **Minor effect of beaver dams on stream dissolved organic carbon in the catchment of a German drinking water reservoir**

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### **Abstract**

Rising concentrations of dissolved organic carbon (DOC) are negatively affecting the water quality in several drinking water reservoirs. The presence of beaver dams can influence surface water quality on a catchment scale. In recent years, beavers have been re-introduced in numerous locations in Central Europe. We investigated whether the presence of beaver dams in the catchment of a German drinking water reservoir impacts DOC quantity and quality in the streams entering the Wehebach reservoir in Germany. By comparing water quality upstream and downstream of beaver dams during three low discharge situations we did not find a significant effect of dams both on DOC quantity and quality. The analysis of long-term monitoring data at the gauges showed that beaver dams had a negligible effect on the DOC load to the reservoir. DOC quantity was closely linked to iron concentration in the streams. Co-precipitation with iron minerals was an effective process removing DOC from the stream-water. By analyzing fluorescence excitation emission indices we show that beaver dams did not have a clear effect on DOC quality. We conclude that the presence of beaver dams has only small effects on water quality and is not a problem for water quality in the downstream drinking water reservoir.

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