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Limnogeological investigation at reservoir Hohenfelden

MICHAEL WÜNDSCHE, PEGGY BIERBASS, TORSTEN HABERZETTL & THOMAS KASPER

Abstract

In this work the reservoir Hohenfelden in central Thuringia was investigated. Hydro-acoustic measurements were performed for compiling a bathymetric map of the lake basin, that was influenced by peat mining. After physicochemical characterisation of the water column several sediment cores and sediment surface samples were recovered. During laboratory analyses magnetic susceptibility of sediment cores and phosphorus content of the surface samples were analysed. Results show that the maximum water depth of the reservoir Hohenfelden is about 6 m and the basin reveals a rather flat morphology. Thus, the reservoir shows a polymictic circulation. Thicknesses of the investigated sediments range between 25 and 60 cm. The phosphorus content of sediments ranges between 0,806 and 1,250 mg·g⁻¹. Highest amounts occur in the area of former peat mining as well as close to the inflow. These phosphorus results correspond to values of a former investigation (2005), which was conducted due to eutrophication of the reservoir and associated algae blooms during summer time.