
THE IMPACT OF OXYGEN AND NITRATES AVAILABILITY ON PHOSPHORUS CYCLE IN SEDIMENTS – AN EXAMPLE OF THE VRANOV RESERVOIR

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This study focus on phosphorus (P) release from sediment of inflow part of Vranov reservoir under different availability of terminal electron acceptors, mainly dissolved O_2 and NO_3^- . The inflow parts of eutrophic reservoirs typically exhibit exacerbated rates of primary production, with concomitant increase in organic matter sedimentation. Its microbial remineralization leads to the consumption of electron acceptors, shifting their availability depending on water column mixing. To understand the cycling of P in sediments, sediment cores were incubated for five weeks in three parallel variations that simulated: i) anoxia with depleted NO_3^- ; ii) O_2 saturated water column and iii) O_2 saturated water column in the presence of high concentrations of NO_3^- . Evaluating the release of P and the impact of Iron (Fe) and its metabolism in sediment under the different conditions, water above the sediments was monitored, porewater composition and different P fractions in the sediment were analysed.