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Preliminary geochemical results from a gravity core from Stechlinsee in northeastern Germany

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Northeastern Germany is one of the driest regions in Germany. Due to global warming, droughts are projected to further increase while groundwater levels already decreased significantly. As the area is characterized by many postglacial lakes, paleoclimate studies using lake sediments can help to provide a long-term perspective on climate changes and to potentially anticipate future impacts on the lake ecosystems. This study aims to evaluate the potential of Stechlinsee as an archive for paleoclimate and paleoenvironmental reconstructions using sedimentological, geochemical, and particularly lipid biomarker proxies. We present preliminary results from a 95 cm long gravity core. While numeric age control for the sediments is not yet available, we estimate the core to cover roughly the last 500 years. The bottom part of the core shows an increase in P probably related to settlements and land use. A distinct Pb peak at ~50 cm depth might be associated with the establishment of a glass production facility in 1737 CE. Thereafter, an increase in clay, Al, Mg and K can be explained with the construction of an artificial channel from 1745 to 1751 CE that was needed for wood transportation. First results of the *n*-alkane analyses show that concentrations are high, preservation generally good (OEP >5), and high Paq indicates that both aquatic and terrestrial compounds are available. Compound specific $\delta^2\text{H}$ analyses are in progress to establish a proxy for hydroclimate, as well as polycyclic aromatic hydrocarbons (PAH) to explore human activities in the area.

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