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A great response from small ecosystem – the last 500 years of history of a kettle hole mire in W Russia

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Peatlands are natural geoarchives which record within organic deposits a picture of the past environmental changes. Depending on the preserved proxy, we are able to reconstruct various aspects of palaeoenvironmental changes, e.g. using pollen (vegetation composition), plant macrofossils (local vegetation changes), testate amoebae and zoological remains (hydrological changes) or XRF scanning (geochemical changes). Here, we investigated changes in land use and climate of western Russia using a range of biotic and abiotic proxies. This part of Europe is characterized by a continental climate, which makes this region very sensitive to climate change, in particular to precipitation fluctuations. Furthermore, in the last two centuries strong human impact in that area has been noticed.

The Serteya kettle hole mire (55°40'N 31°30'E) is situated in the Smolensk Oblast in Western Dvina Lakeland. Study site is located close to the range of plant communities belonging to the hemiboreal zone, making it an ideal position to trace the plant succession of Eastern Europe. Preliminary dating of the material proves that the average rate of biogenic deposits in the reservoir was approx. 1 m per 600 years. The majority of the European peatlands was in some sense transformed as a result of drainage and land use practices in their basins. Serteya kettle hole mire allowed us to accurately track how a small ecosystem responds to palaeoenvironmental changes. Preliminary results will show the major fluctuations of the mire hydrology accompanied

by the changes in the land use in the region. Our goal is also to determine the resistance and resilience of peat bogs to disturbances.