

## **Investigating climatic and anthropogenic disturbance in continental peat archives of C Europe and W Siberia**

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High-resolution multi-proxy studies became a standard approach to reconstruct paleoenvironmental changes. Here we present the results from three peatlands located in Poland, Switzerland and Russia, respectively. Most of those archives cover the last 1000 years, however several reach also 4k. Using TA, charcoal, plant macros, we reconstructed past fire events and peatland hydrology over long time scales. We found that hydrological variability in these peatlands was connected with the internal feedbacks, and land-use change, although we should be very careful in terms of climatic interpretation. Recent research shows that stable wet bogs can be dated to ca AD 1350, which correspond to the beginning of considerable hydrological disturbances during the Little Ice Age (LIA). In case of several Baltic bogs, we recorded the wet phase of LIA between AD 1500 and AD 1800. However, this climatic event might have been partly blurred by land-use change connected with deforestation. After AD 1200, increasing human impact and climatic instability was inferred, also during the LIA. Furthermore, Polish and Siberian sites revealed a wet Medieval Warm Period, then Little Ice Age was hydrologically unstable. Our results provided information related to the time of existence, location and characteristics of the natural/pristine state of the bogs. Palaeoecological studies on peatlands should possess a good ecological background to appropriately interpret past events. We made several steps towards such an interdisciplinary approach trying to compile palaeoecology, monitoring and experiment in e.g. CLIMPEAT ([www.climpeat.pl](http://www.climpeat.pl)) and WETMAN ([www.wetman.pl](http://www.wetman.pl)) projects that are expected to support our future quantitative inferences.

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