



Project CLIMPEAT - Influence of global warming and drought on the carbon sequestration and biodiversity of Sphagnum peatlands

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Northern peatlands represent a globally significant pool of carbon and are subject to the highest rates of climate warming, and most of these peatlands are in continental settings. However, it is unclear if how fast peatlands respond to past and present changes in temperature and surface moisture in continental vs. oceanic climate settings. The CLIMPEAT project brings together scientists from Poland and Switzerland. Our goal is to assess the past and present vulnerability to climate change of Sphagnum peatland plant and microbial communities, peat organic matter transformations and carbon sequestration using a combination of field and mesocosm experiments simulating warming and water table changes and palaeoecological studies. Warming will be achieved using ITEX-type "Open-Top Chambers". The field studies are conducted in Poland, at the limit between oceanic and continental climates, and are part of a network of projects also including field experiments in the French Jura (sub-oceanic) and in Siberia (continental). We will calibrate the response of key biological (plants, testate amoebae) and geochemical (isotopic composition of organic compounds, organic matter changes) proxies to warming and water table changes and use these proxies to reconstruct climate changes during the last 1000 years.