



Peatland dynamics and changing climate – lessons from the past

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Recent modeling studies predict that due to warming northern peatlands will act as increasingly effective carbon sink over the next century. This is a result of accelerated carbon uptake from the atmosphere via photosynthesis. However, in addition to climate forcing, peatland processes are driven by autogenic succession processes and other allogenic factors, such as fires. Different peatland types, fens, bogs and permafrost peatlands, respond differently to environmental changes. Nevertheless, climate is changing and we can anticipate various impacts on peatland dynamics and associated feedback processes. Is past a key to understand the future? This summary presentation briefly introduces palaeoecological approach and data of past peatland-climate links capturing 1) permafrost dynamics, thawing through drying 2) long-term changes in nutrient status and succession patterns, fen to bog transition 3) peatland initiation and spatial distribution, lateral expansion 4) fire disturbances. Besides the peatlands act as an integral global biogeochemical agent, it should be acknowledged that they also provide important ecosystem services, maintain biodiversity and enable economic activities. Thus, it is vital to increase our understanding of the responses, links and feedbacks between climate and peatlands.