



KLIBB – Climate-friendly and biodiversity-promoting use of fen soils in Germany

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Drainage-based utilisation of fen soils for agriculture and forestry leads to disproportionately high CO₂ emissions and losses of characteristic biodiversity in fen ecosystems. Rewetting combined with site-adapted land use (paludiculture) can effectively lower emissions and may restore habitats for characteristic fen species. Climate-friendly, biodiversity-promoting land use on fen peatlands would substantially contribute to Germany's obligations and ambitions regarding multi-lateral environmental agreements such as UNFCCC and CBD, and the respective national plans. The spatial potential of such land use options and their impacts on greenhouse gas (GHG) emissions and biodiversity have not yet been evaluated in detail in key peatland-rich federal states of Germany.

Within the project KLIBB - Climate-friendly and biodiversity-promoting use of fen soils (2018-2019) we develop guidelines for peat-preserving utilisation of temperate fen soils motivated by climate protection and biodiversity enhancement. First, we establish criteria for suitability classes for peat-preserving land use options. According to these criteria, suitability maps for three peatland-rich German federal states are prepared (adding to an existing map for one state published in 2017, and in co-operation with state authorities). The various land use options for wet fen soils (ranging from traditional techniques like reed cutting for thatch and pastures to innovative options like energy generation from fen biomass) are described regarding implementation and economics. The potential reduction of (GHG) emissions is assessed for the land use options and for the studied federal states according to the suitability maps. Based on a literature review regarding the effects of rewetting and various land use on biodiversity, potential benefits, losses and trade-offs for biodiversity are identified. Possibilities to increase benefits for mire-typical biodiversity are described and assessed with respect to costs. This includes, for example, adapted harvesting techniques (cutting instead of rotary techniques), uncut refuge areas, adjusted mowing direction (inside to outside) and cutting dates, and limited stocking density and partial exclusion of livestock. Such measures could be included e.g. in future agri-environmental payments. Via the Federal Agency for Nature Conservation and a working group of all German peatland-rich federal states, the project's results can feed directly into national and regional policies. Furthermore, they provide a baseline for a deeper analysis of agricultural policies with regard to peat soils.