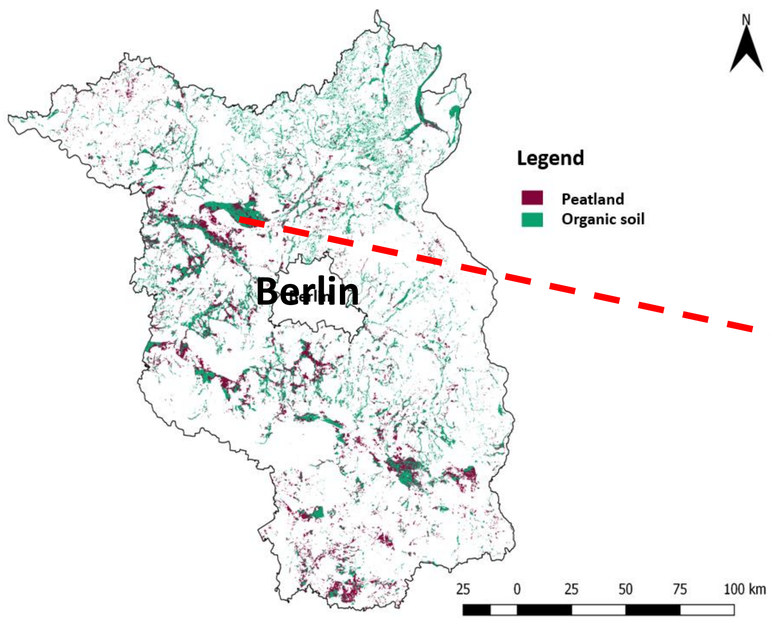
The climate-friendly management of the agricultural peatlands in Brandenburg, Germany

Spanjers, Bas*,**; Abel, Susanne*; Heiermann, Monika***

*Federal Environmental Agency of Brandenburg; **University of Greifswald, Institute of Botany and Landscape Ecology, partner in the Greifswald Mire Centre; ***Leibniz-Institute for Agricultural Engineering and Bioeconomy, Germany

Peatlands in Brandenburg



Peatlands and soils with high organic matter in the federal state of Brandenburg, Germany (1)

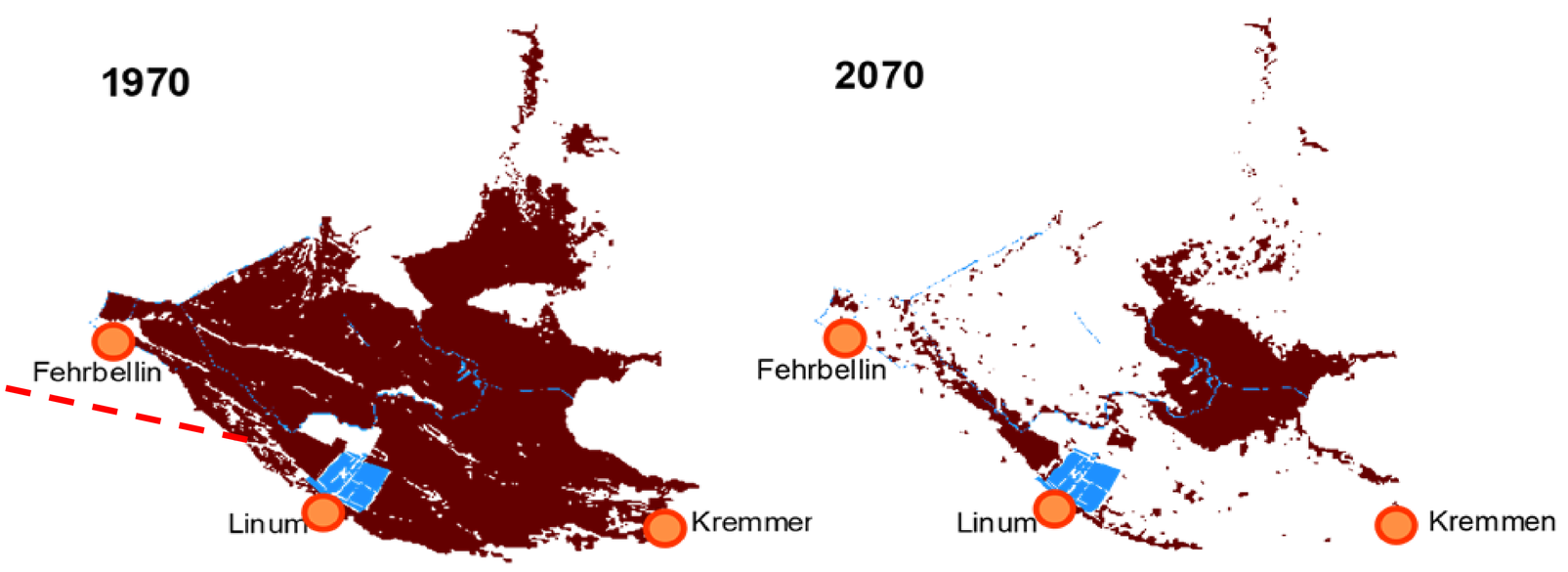
In the federal state of Brandenburg in Germany, 121.000 ha of the 165.000 ha of peatlands are in agricultural use. Another 98.000 ha are soils with high organic matter, mainly degraded, former peatland soil. In total Brandenburg contains about 263.000 ha of climate-relevant soils. These soils emit about 6,8 million tons of $CO_{2\text{-eq}}$ in 2012 (2). This is about 9% of the total GHG-emissions in Brandenburg, comparable with sources like traffic and industry.

Drained meadows in the Rhinluch (Picture: Bas Spanjers)

Strategies to prevent peat degradation

To prevent further peat degradation, Brandenburg wants to show that the management of agricultural peatlands can be profitable without draining the meadows. Different strategies to achieve this target were rolled out. One strategy is the implementation of "**peat-sustaining-water-regimes**" of grassland with fixed weirs to achieve water tables of 10 cm below surface in winter and 30 cm in summer, or higher to store the winter water as long as possible. For this strategy, a funding programme was initiated for farmers of € 387/ha*year (Agri-Environmental Climate Scheme, AES). A second strategy is to support the investment of new or adapted technical equipment to maintain the wet peatlands without damaging the soil. For this strategy, an additional subsidy programme (**ProMoor**) was initiated, and workshops and events were organized. A third strategy is the establishment of paludicultures connected with the development of new markets.

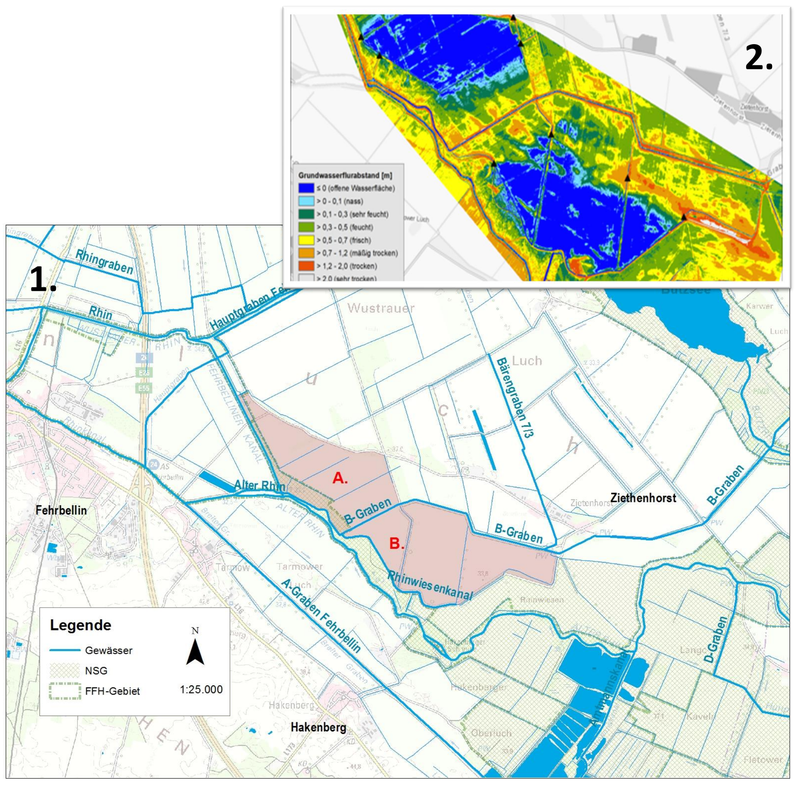
Subsidy programmes in Brandenburg	Content & more information
Peat-sustaining-water regimes with fixed weirs	€ 387/ha*year for water levels of 10 cm below surface year around and 30 cm below surface between the 1st of Juni and the 15th of Oktober https://mluk.brandenburg.de
ProMoor	Till 60% reduction of investments for new and adapted techniques with low soil pressure https://mluk.brandenburg.de



Predicted loss of peatland in the Upper Rhinluch due to drainage in 2070; 0,5 – 1 cm/ year (3)

Finding the appropriate paludiculture in the Rhinluch

The Rhinluch is the biggest remaining peatland area in Brandenburg. In cooperation with seven farmers and other stakeholders, alternatives for the conventional drained meadow management have been explored. In two demonstration areas of about 300 ha, the different strategies will be implemented. All the farmers are going to apply for the AES "peat-sustaining-water-regimes" programme. Three farmers have purchased new lighter harvesting techniques and the establishment of paludicultures with cattail, wet meadows (sedges), reed and canary grass is planned for the next 10 years.

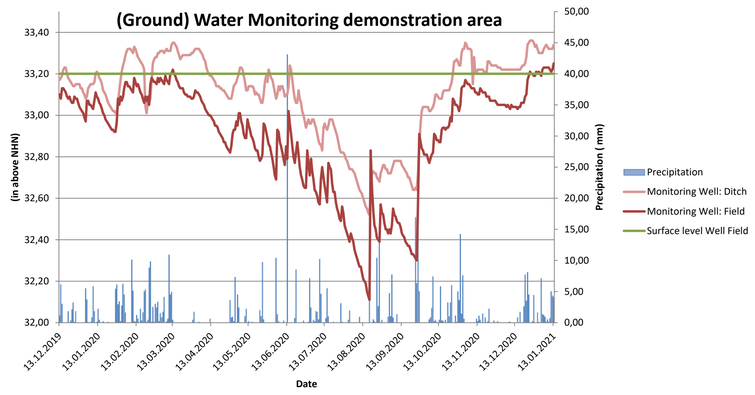


1. Demonstration area for paludicultures in the "Rhinwiesen", in the municipality of Fehrbellin. 2. appropriated spots (blue) for paludiculture by rewetting the area with water levels of 33,3 m HNH (Area A) and 33,4 m HNH (Area B) (4)

Initial consultation interviews with local utilization companies and organizations were done, to develop value-added chains for the biomass at regional level. The Leibniz-Institute for Agricultural Engineering and Bioeconomy tests the different kinds of peat biomass for utilization purposes.

Hydrological Monitoring

Six monitoring wells were placed for hydrological analyses. For a flooding test all the weirs were closed from January till the 31st of May 2020. Ground water levels dropped till more than 1 meter below surface.



Hydrological monitoring results in demonstration area A.

After facing three dry years in Brandenburg, climate change seems to be the biggest challenge for rewetting the peatlands. Large-scale (>50 ha) *Typha* cultivation are reconsidered, and hydrological circumstances must be improved. Water infrastructural measures like installation of inlets and weirs are planned in 2021 to rewet the demonstration area orderly and to make them suitable for the establishment of paludicultures.

New purchased technique in the Rhinluch with the ProMoor subsidy programme (Picture: Sebastian Petri)

References

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4. Hydrologisch-technisches Gutachten zur Etablierung von Demonstrationsflächen für Rohrkolben-Paludikulturen zur nassen Bewirtschaftung von Mooren im Rhinluch; Biota, 2020

Contact: Bas.spanjers@greifswaldmoor.de