



Putting paludiculture into practice - How can we avoid land use conflicts?

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In Northeast-Germany (federal state Mecklenburg-Western Pomerania), a multi-stakeholder discussion process about the implementation of paludiculture has taken place in 2016/2017. As a result, a multidisciplinary working group has developed conceptual guidelines and spatial plans for paludiculture in this state.

The state has a peatland area of 291,361 ha (12.5% of the land area). Some 165,880 ha (57%) are used for agriculture, including 20,531 ha arable land and 143,998 ha permanent grassland. Currently, most peatlands are drained, causing greenhouse gas emissions of c. 4.5 mio tons CO₂-eq a⁻¹. By raising the water table and adapting land use, up to 3 mio t CO₂-eq. could be avoided annually. For this purpose, the introduction of new land use concepts is necessary, which allow the permanent preservation of the peat body. Such forms of agriculture or forestry require water levels that do not drop by more than 20 cm below soil surface throughout the year and are called paludiculture.

Bringing paludiculture into practice is a paradigm shift in agriculture and forestry. It involves many challenges, including new types of land use conflicts. For example, rewetting and cultivation of reeds on previously moist grassland sites may lead to a loss of high nature value grassland.

The types of paludiculture relevant for North-East Germany were differentiated into 'crop paludicultures' (which are established by planting, seeding or adjusting the management to establish target vegetation) and 'wet meadow paludicultures' (which emerge from permanent grassland just by raising the water level). Considering existing laws and frameworks of land use planning, scenarios for the implementation of both groups were developed. Almost 18% of the agriculturally used peatlands (28,827 ha) are under various types of nature protection. Here, only 'wet meadow paludiculture' can be established. On 52% (85,468 ha) there are no planning or legal restrictions. 'Crop paludicultures' such as Common Reed (*Phragmites australis*), Cattail (*Typha* spp.), Reed Canary Grass (*Phalaris arundinacea*) or Black Alder (*Alnus glutinosa*) may be established here. On 30% (49,929 ha) there are planning guidelines which have to be taken into account before changing land use, and establishing 'crop paludicultures' may be prohibited. A map of paludiculture suitability classes covering the entire state has been elaborated and approved by the state's government.

The developed conceptual guidelines are the basis to implement paludiculture on larger areas. Currently, only demonstration sites exist. By making clear what kind of paludiculture can be established in which areas, conflicts between agriculture and nature conservation are likely to be prevented. We strongly recommend to adopt such guidelines and spatial planning in every region before planning and implementing paludiculture at a regional scale.