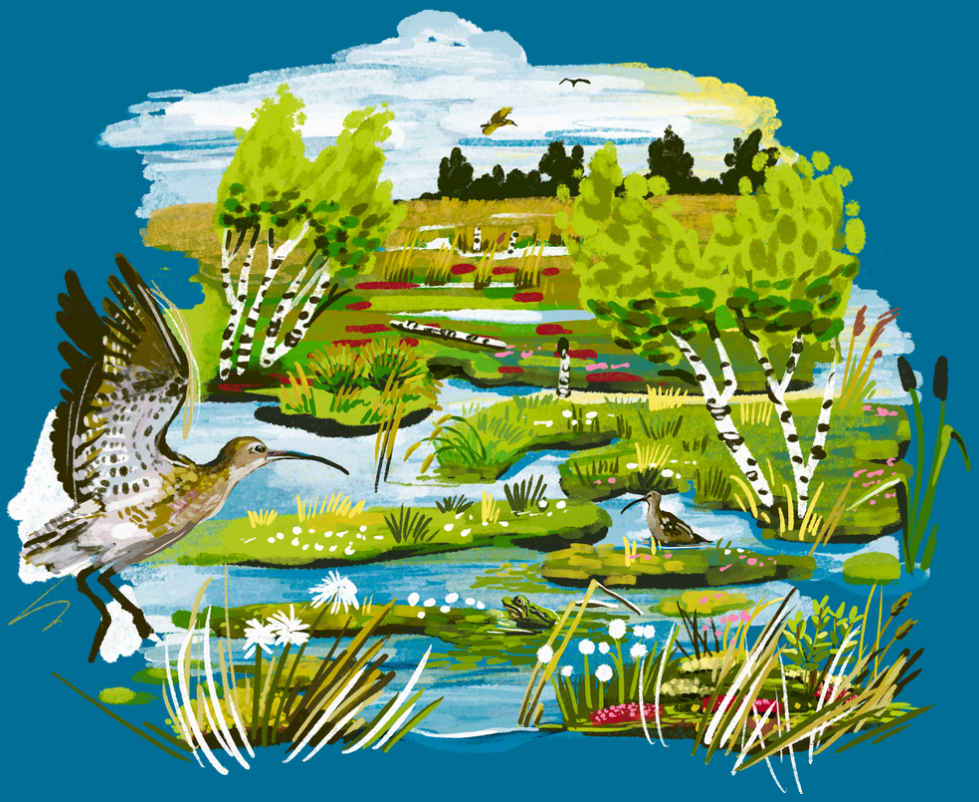
PEATLANDS



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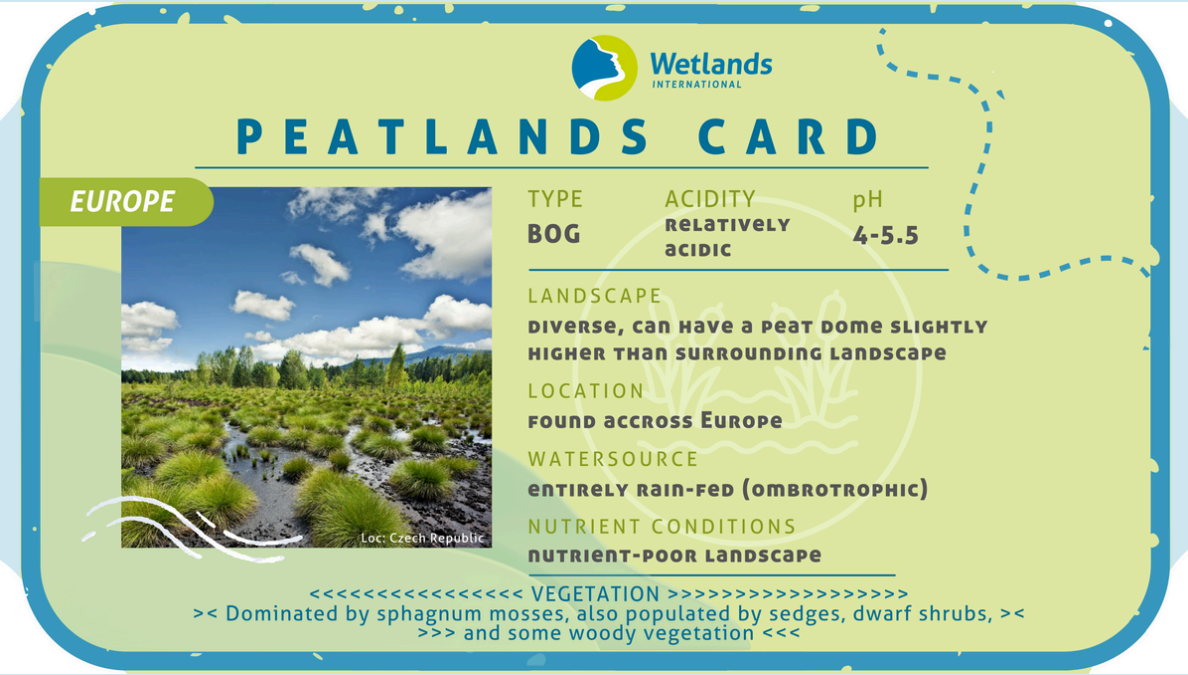
2 TYPES OF PEATLANDS

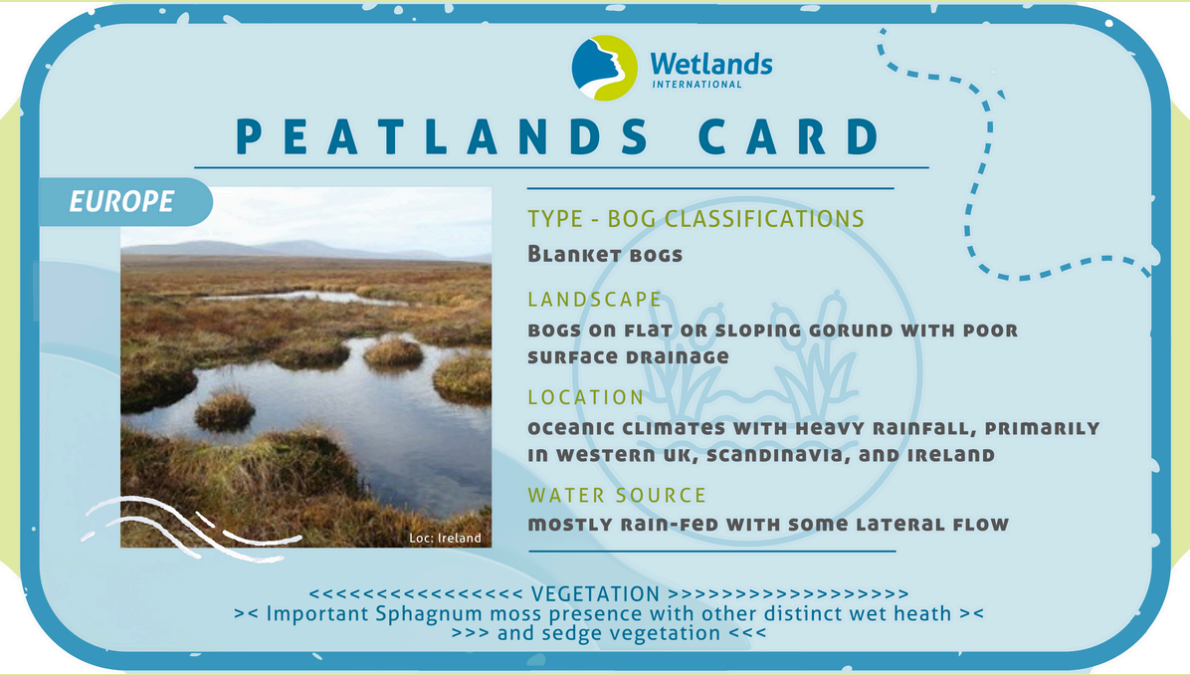
This booklet showcases the three main types of mires which exist in Europe (bogs, fens, and transition mires), alongside some characteristic sub-types. As mentioned on our website, these types often vary based on landscape morphology, water source, acidity, nutrient conditions, and vegetation presence. As a result, they represent highly variable landscapes. Please note that the descriptions in this booklet are specific to European conditions, and conditions/vegetation may vary in different climate zones, such as the tropics.

3 BOG



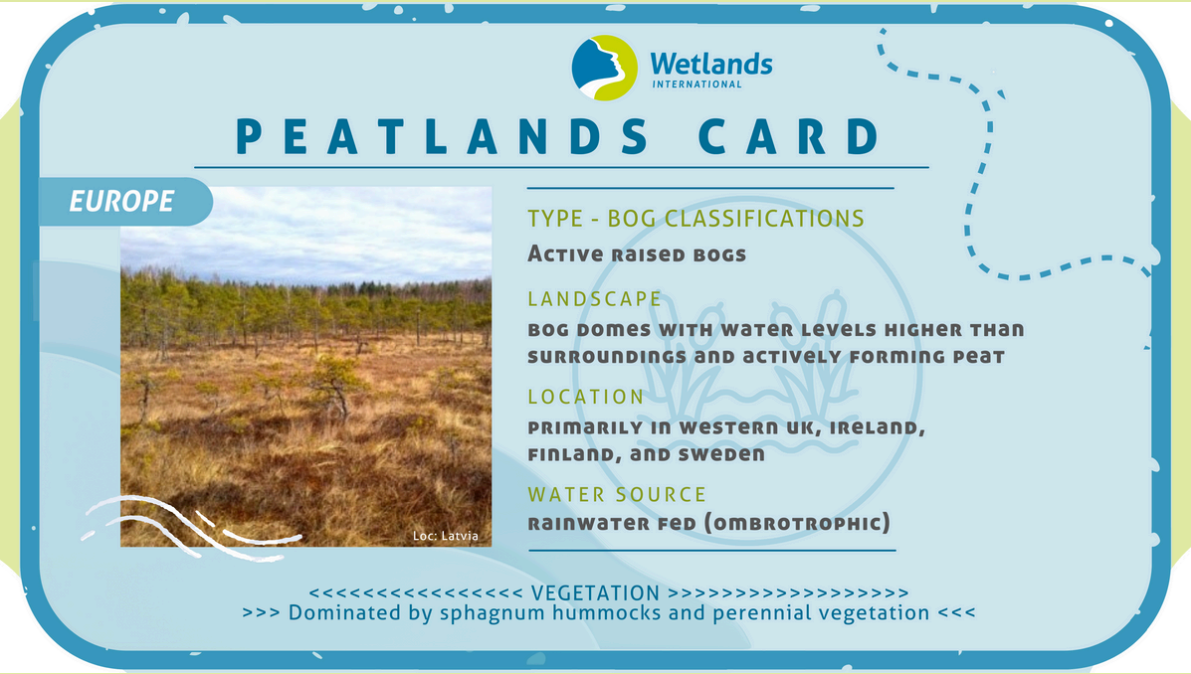
One of the main peatland types are bogs, which are discernible by their dependency on rainwater, making them "ombrotrophic". Being separated from surface or groundwater flow, bogs do not rely on mineral water, meaning that these are low-nutrient and acidic peat areas. This in turn supports specialized vegetation which thrives in such environments, particularly Sphagnum mosses. These peatlands occur throughout Europe, where conditions support sufficient rainfall and peat formation.

3.1 Blanket Bogs



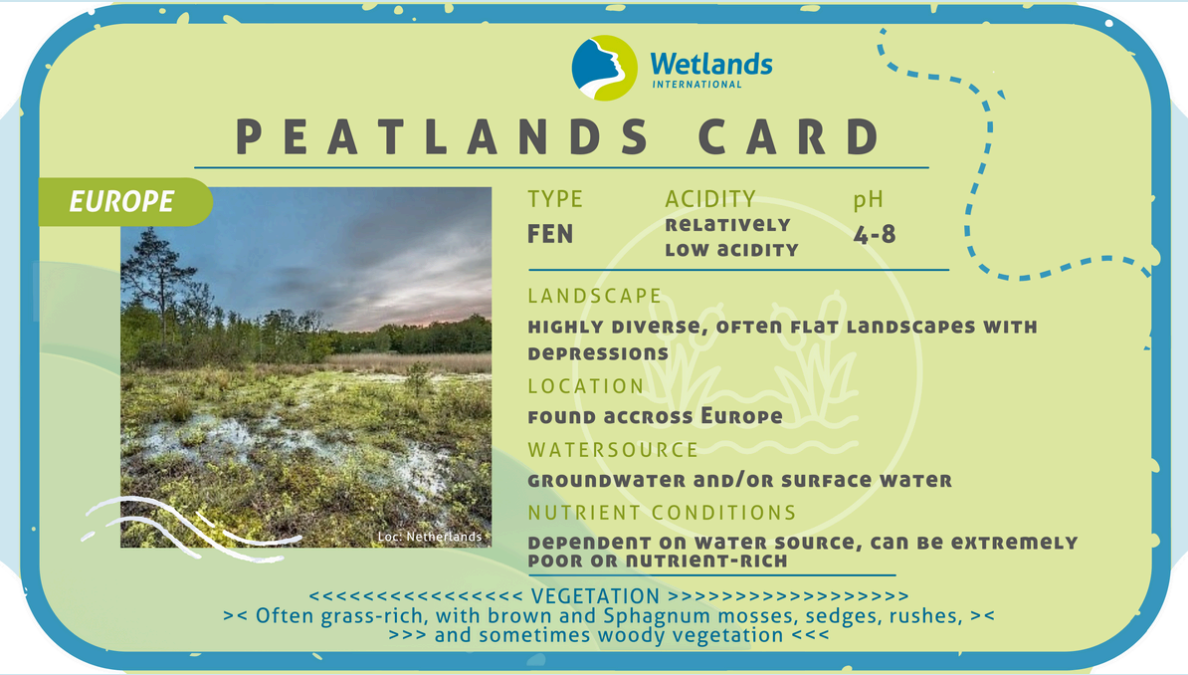
Within oceanic climates, some landscapes exist where rainfall is extensive, evapotranspiration is low, and surface drainage is poor. In these regions, such as across Ireland, north/west England, and Scotland, some peat bogs are therefore capable of forming over large areas of flat, sloping, or undulating ground. As a result, extensive swathes of the landscape are covered in a so-called "blanket" of bog. These peat blankets separate the vegetation above it from the groundwater below, making it primarily influenced by rainwater. Because of these climatic and morphological conditions, blanket bogs are mostly dominated by Sphagnum mosses, heathers, and sedges, while being devoid of trees due to extreme acidity and nutrient scarcity.

3.2 Active Raised Bogs



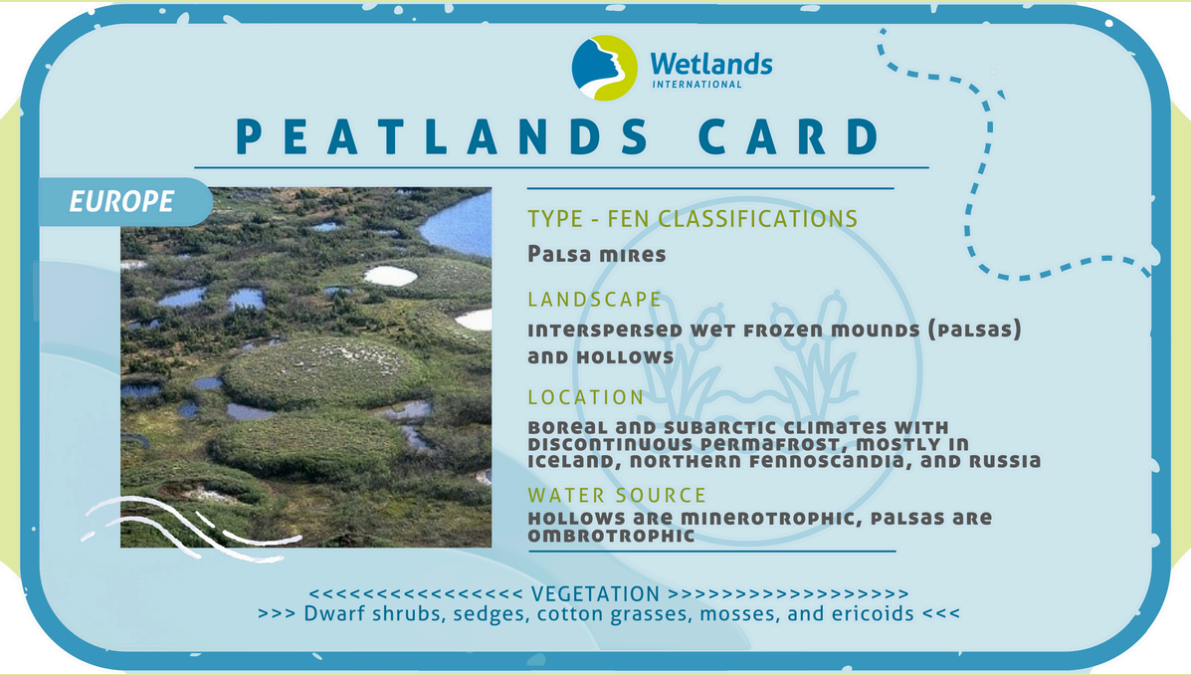
Active raised bogs are specifically bogs which are rainwater-fed due to the accretion of peat. As the peat layer becomes thicker over time, it rises higher than the surrounding landscape in a dome-shape. As it rises, this dome slowly becomes separated from surface or groundwater flow, with eventually its sole source of water and nutrients being rainfall from above instead. Importantly, the term "active" indicates that these bogs are still actively forming peat. The presence of such peat mounds mean that active raised bogs can contain very deep layers of peat, around up to 8-12 meters deep in some places. Within Europe, the wet conditions needed for these raised bogs makes it mostly present in northern Europe, such as Ireland, the UK, the Baltics, northern Germany/Netherlands, and parts of Scandinavia.

4 FEN



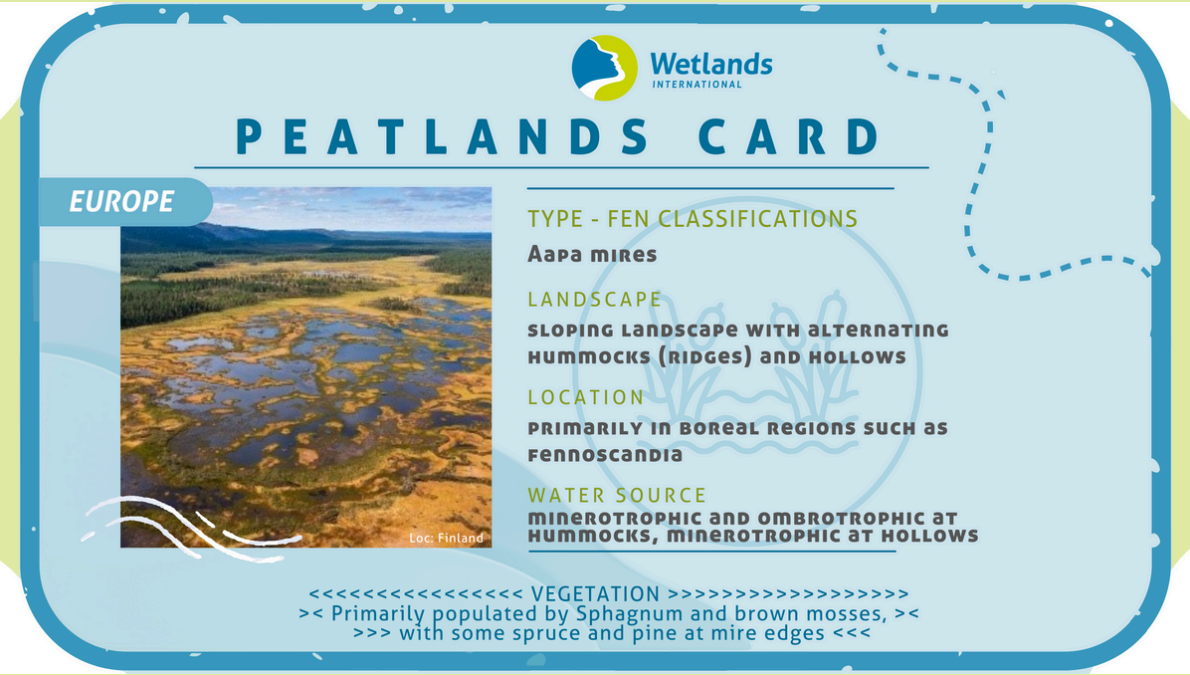
Fens are wetlands fed by groundwater or surface water, distinguishing them from rain-fed bogs. They are widespread across Europe and characterized by waterlogged conditions that enable peat accumulation. The nutrient conditions in fens vary depending on their water sources. Fen vegetation is typically diverse, often presenting a grass-rich environment alongside brown and Sphagnum mosses, rushes, sedges, and in some cases wooded vegetation.

4.1 Palsa Mires



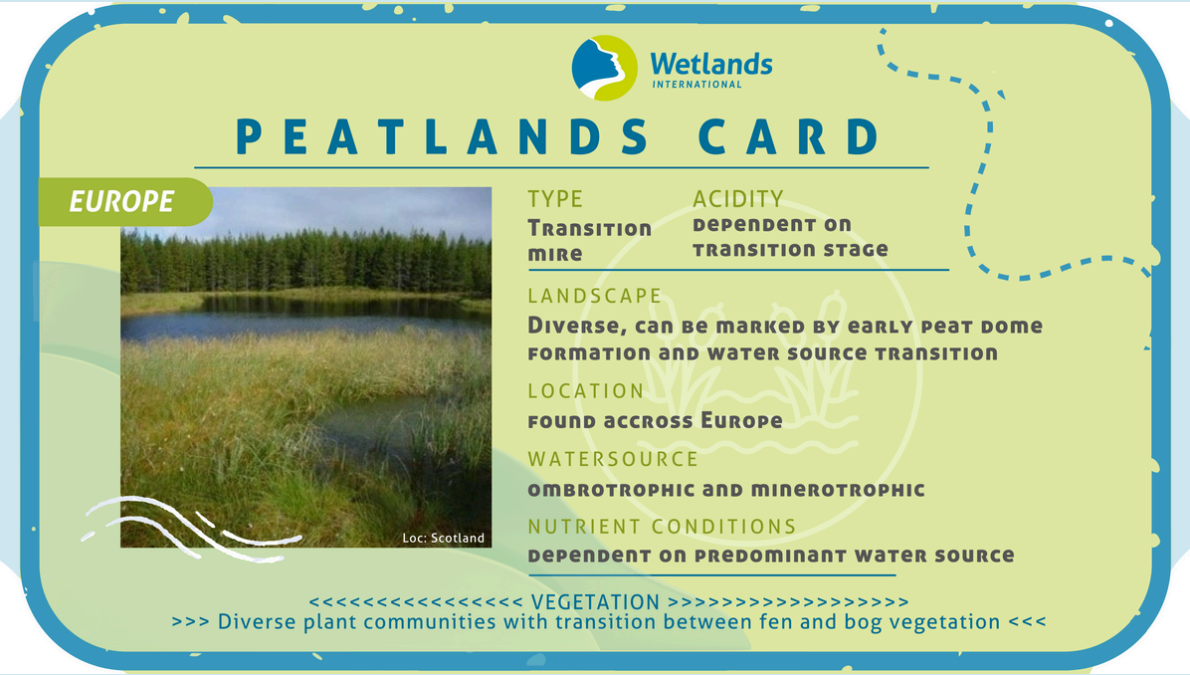
Palsa mires are peatland formations found in areas with sporadic or discontinuous permafrost, commonly in northern Norway, Sweden, Finland, as well as parts of Iceland and Arctic Russia. Palsas are raised mounds, typically 2–4 meters high, occasionally reaching up to 7 meters, formed by a frozen core of peat, silt, and ice. A surface layer of Sphagnum peat insulates the core and prevents thawing. When the peat dries out and erodes, the permafrost core may thaw and collapse, forming thermokarst ponds. Due to climate change, palsa mires are projected to largely disappear by 2080 under high-emission scenarios.

4.2 Aapa Mires



Aapa mires are extensive fen complexes predominantly found in the boreal region of Europe, especially in Finland, Sweden, Norway, and Russia. They feature alternating ridges (strings) and wet depressions (flarks), creating a striped appearance. These mires are minerotrophic, receiving nutrients from snowmelt and groundwater, which supports diverse plant communities. The central parts often consist of open, wet fens, while the margins may transition into spruce or pine mires. In sloping terrains, aapa mires can form sloping fens. Their unique hydrology and vegetation make aapa mires important habitats for specialized flora and fauna.

5 TRANSITION MIRE



As mentioned earlier, peatlands are dynamic systems influenced by changing landscape and climatic conditions. Over time, fens and bogs can evolve, giving rise to transition mires for those peatlands which are in the middle of undergoing this change. These peatlands are fed by both surface/groundwater and rainwater, although the proportion of one or the other varies substantially. This typically means that most of its abiotic conditions are similarly in-between the characteristic levels of a bog or fen, and highly variable based on the progress of the transition. Meanwhile, the vegetation is a blend of bog-like Sphagnum and the more diverse fen-specific grasses and shrubs.

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