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How drying affects wetland soils - implications for biogeochemical cycles

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Drying is predicted for northern peat-forming wetlands - peatlands - with the changing climate. Drying is also the consequence of most land-use changes in peatlands. Persistent drying brings along several physical changes in the surface soil, followed by chemical and biological changes. These changes affect the biogeochemical cycles in peatlands in several ways. They further have implications for how to estimate the carbon balance of these soils. My aim is to review changes in, e.g., peat bulk density, pore size distribution, redox potential and pH induced by persistent drying of peatlands, evaluate their implications for biogeochemical cycles, and show why some methods used for estimating the carbon balance of these soils do not work at all.