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# Not back to their old selves – rewetted peatlands require functional understanding for sound management

**Jürgen Kreyling**[1], Franziska Tanneberger[1], Florian Jansen[2], Sebastian van der Linden[1], Hans Joosten[1], Gerald Jurasinski[2], and many Many Others[3]

[1]University of Greifswald, Greifswald, Germany
[2]University of Rostock, Rostock, Germany
[3]many institutions, several countries

**Peatlands, in particular temperate, groundwater-fed fens, have widely been drained for agriculture. However, draining peatlands turns them into globally relevant carbon sources, diminishes water holding capacity and nutrient removal at landscape scales, and threatens their native biodiversity. Consequently, formerly drained peatlands are now being re-wetted in large numbers for mitigating climate change, combating eutrophication, managing water and preserving biodiversity. A comparison between >300 rewetted peatlands to > 260 close to natural peatlands across temperate Europe, however, indicates that rewetting drained peatlands induces a helophytization (a dominance of tall, graminoid wetland plants) with no trend back to their former biodiversity (vegetation) and function (geochemistry, hydrology) for at least several decades. An understanding of these locally novel ecosystems is required for sound and sustainable management of their ecosystem services.**