Valuable peatlands at risk of disappearing
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Peatlands are valuable ecosystems that store water and large quantities of carbon and that support high biodiversity. However, 20 percent of the European raised bog habitat is currently under threat from climate change and dewatering.

In new research published in *PNAS* scientists of among others Wageningen University & Research show how peat can disappear and be created.

**Tipping point**

Forests and peatlands are inextricably linked, according to the study conducted by researchers at Wageningen, Amsterdam, Utrecht and other universities. These two ecosystems can exist happily side by side but as soon as they pass a certain point, critical limits are exceeded.

Then peat can turn into forest and forest can become peat. Wherever organic material accumulates, the soil becomes wetter and fewer trees grow, so the soil become even wetter, ultimately turning into peat. Conversely, desiccation causes trees to grow on peat, which gets even drier, becomes depleted and eventually disappears.

Jakob Wallinga, Professor of Soil Geography and Landscape at Wageningen University & Research says that “from this study we have learned a lot about tipping points in landscapes, in addition to insight into shifts between peat and forest systems. This knowledge will be useful in new research projects aimed at a climate-robust future for landscapes in the Netherlands."

**Creation or preservation of peatland**

The study developed a model that shows where in Europe the conditions are right for the creation or preservation of peatland. One third of Europe has a climate that is, in principle, suited to preserving existing peatland. In contrast, the formation of new peatland is possible in only a fraction of those areas.

The new study in *PNAS* is important because never before have peatlands been studied so explicitly from the point of view of the landscape. The researchers argue that a landscape perspective—including interactions between peatlands, forests and rivers—is essential to understand and control the future of peatlands.


Provided by Wageningen University