With the right plants, wetlands can recover, says researcher

September 9 2024

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Wetlands, such as bogs and marshes, have largely disappeared in the

Netherlands. With humidification and the growth of the right plants, wetlands can be restored. This is evident from research by Renske Vroom, who will receive her doctorate on this subject at Radboud University on September 13.

Wetlands are places where land and water come together, such as lowlands and marshes. Ecologist Renske Vroom said, "These areas are very important for clean water, for example. They prevent flooding and are treasure troves for biodiversity. Moreover, they store a lot of carbon, which is crucial for the climate. If those areas are drained, a lot of extra CO_2 will be released and the soil will sink."

Wetlands have to be restored, also according to the Nature Restoration Act, and especially in the Netherlands there are gains to be made. "Worldwide, about 21% of wetlands are degraded by people, but in the Netherlands the percentage is 77%. Here many peat bogs have been drained for agriculture."

Water quality

But if you start wetting these drained areas again, you get a new problem. Because of intensive agriculture, these areas are no longer in good condition. Vroom said, "There are many harmful substances in the soil as a result of, among other things, artificial fertilizer. If you start wetting it, all those substances flow back into nature. That is bad for water quality, for example."

What helps is the cultivation of plants on top of that wetted soil: they use the nutrients to grow. In several experiments near Zaandam and in Germany, Vroom opened the garden hose and flooded entire areas. Some areas remained drier, in others the water level stood as high as 20 centimeters.

"We found out that the cattail does very well on peat that contains a lot of nitrogen. Azolla, a type of duckweed, does well if you have a lot of phosphate. Peat moss works very well when there are not so many nutrients in the soil."

Harvesting

"These plants can be harvested and used. Lisdodde can, for example, be used to make insulation material and can partly be used as cow feed. Azolla can also serve as animal feed, or as a soil improver."

The advantage of this is that the transition from agriculture to nature development can be beneficial for both nature and the farmer: farmers can theoretically wet the land, grow plants on it and then sell the harvest.

Vroom says, "It is often said that more research is needed, but now more and more studies are showing that these methods work very well. The most important thing is that wetlands get restored. At some point you just have to start doing that. With humidification and growing plants, you can basically solve the problem."

Provided by Radboud University

Citation: With the right plants, wetlands can recover, says researcher (2024, September 9) retrieved 11 September 2024 from https://phys.org/news/2024-09-wetlands-recover.html