

Hidden greenhouse emissions revealed in new Board of Agriculture report

March 10 2015, by Carina Eliasson



Restoring drained ground to wetland reduces the release of both carbon dioxide and nitrous oxide from the ground. Credit: Karin Hjerpe.

Restoration of wetlands can reduce greenhouse gas emissions. This is

shown in a report that has been written in part by researchers from the University of Gothenburg.

Former wetlands that have been drained and which are currently used for forestry and agriculture give off 11.4 million tons of [carbon dioxide equivalents](#). That can be compared with Sweden's total emissions of 57.6 million tons (when the land use sector is not included). But in Sweden's [report](#) to the Climate Convention, emissions from drained peatland are not visible since they are included with forest growth.

New report from the Swedish Board of Agriculture shows the way

The report Emissions of Greenhouse Gases from Peatland shows that drained peatlands should be restored into wetlands so as to reduce [greenhouse gas emissions](#). Studies of greenhouse [gas emissions](#) from drained peatlands that are used for forestry production show that nutrient-rich, well-drained areas of land release more [greenhouse gases](#) than nutrient-poor, wetter grounds do.

"The report states that some three percent of Sweden's land area is drained peatland and it discusses which of these areas should be rectified in the first instance," says Åsa Kasimir, researcher at the Department of Earth Sciences, University of Gothenburg.

She is one of the authors of the report which was published this year. The report has been produced by the Swedish Board of Agriculture (Jordbruksverket), the Swedish Forest Agency (Skogsstyrelsen), the Swedish Environmental Protection Agency (Naturvårdsverket), the Swedish University of Agricultural Sciences (SLU), the Federation of Swedish Farmers (LRF), Stockholm University and the University of Gothenburg.

Restored land reduces total emissions

Restoring drained ground to wetland reduces the release of both carbon dioxide and [nitrous oxide](#) from the ground. Although the release of methane will increase in the long term, the decrease of [carbon dioxide](#) and nitrous oxide will be greater which means that, all in all, greenhouse gas emissions from the ground will be reduced.

"Because a reduction in greenhouse gas emissions is now urgently needed, restoring wetlands is an effective environmental measure," says Åsa Kasimir.

New regulations needed to bring about change

In order to restore drained peatland, initiatives are needed by decision-makers. "Some conceivable ways of doing this would be for the government to issue guidelines or offer support," says Åsa Kasimir.

"Political measures must comprise either a reward or a penalty. Either landowners pay for their [greenhouse gas](#) emissions or the government pays landowners to restore their drained land to wetland. The latter is probably a more likely route since the government used to advocate drainage. The new Rural Development Programme (Landsbygdsprogrammet) could be a way forward."

Establishing wetlands can also give other benefits such as increased biological diversity and it may reduce nutrient leaching into lakes and watercourses.

Provided by University of Gothenburg

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