Mercury in lakes and rivers could soon be a thing of the past



Left and middle: Photographies from Degerö mire. Photographer: Jenny-Svennår-Gillner. Right: Pike in a lake in Dalarana. Photographer: Anders Asp, SLU.

Mercury is part of the world health organization top ten regarding chemicals that are harmful to human health. In more than half of the lakes and rivers in Sweden, the fish as an example contains so much mercury that they should be avoided in terms of food. The problem has seem to be nearly impossible to solve, but new research brings hope; the problem with mercury could possibly be a thing of the past.

The results were published on the 22nd of November 2017 in the renowned journal Scientific Reports, by a Swedish-Chinese-Swizz research group.

-Our research shows that it can be harmless to eat Swedish fish caught from lakes within a couple of decades, if we continue with current preventive precautions. We no longer talk about centuries, as was first believed to be the case, says Kevin Bishop from Swedish University of Agriculture, one of the researchers behind the study.

What researchers are presenting is the first mass balance performed on mercury in a mire (Degerö mire in Västerbotten), meaning measurements of all fluxes of mercury entering and leaving the mire. The study became possible after nearly a decade of work '*med att ta fram'* equipment that was delicate enough to measure fluxes of mercury gas between the atmosphere and the landscape. To be able to do ten measurements per second for a year whether the fluxes are toward or away from the mire is in its own way a great technical achievement, but the truly remarkable are the results.

-The first series of measurements for over a year showed that the flow of mercury gas from the mire to the atmosphere is twice as high as the inflow by rainwater, which is astounding. That would mean the halving of mercury in the atmosphere which have been achieved over the past 20 years has changed the direction of the flow of mercury between the atmosphere and the mire, says Mats Nilsson from SLU.

With the current pace mercury is disappearing, researchers are estimating that all stored mercury within the mire will have disappeared within a couple of decades, mostly to the atmosphere. This is really great news, as peatlands are so contaminated with mercury that it affects the fish living downstream in lakes and rivers.

The fact that there did not seem to be anything to be done with the mercury situation has made it comfortable to shy away from the problem. The public attention has rather been put on other pollutants affecting the environment, rather than on this seemingly unsolvable old problem.

An almost hopeless problem has suddenly see to have disintegrated in a much quicker pace than what we could have hoped for, says Kevin Bishop, provided that we continue our successful work against spreading mercury in our environment. Mercury seems to slowly, but steadily, disappear.

If the results are valid for peatlands in general, the led UN efforts to decrease global emissions of mercury will have a much more significant impact for Sweden and other countries with a similar problem with mercury in their in-water fish, such as Finland, Canada and the US.

More information

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The article

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