

Constructed wetlands save frogs and birds threatened with extinction

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Over the last few decades, several thousands of wetlands have been constructed in Sweden in agricultural landscapes. The primary reason is that the wetlands prevent a surfeit of nutrients from reaching our oceans and lakes.

A study from Halmstad University shows, in addition, that wetlands have contributed to saving several frog and [bird species](#) from the "Red List"—a list that shows which species are at risk of dying out in Sweden. In the latest update, five of the nine red-listed bird species that breed in wetlands—including the little grebe and the little ringed plover—could be taken off the list. Yet another bird species was moved to a lower threat category. As regards batrachians, four species—among them the European tree frog—have been taken off the list, and two species have been moved to a lower threat category.

Great effect on biological diversity

"An important objective in constructing wetlands is reducing eutrophication – over-fertilisation. It's surprisingly positive that they've also had such a great direct effect on biological diversity," says Stefan Weisner, Professor of Biology specialising in environmental science at Halmstad University.

During the 19th and 20th centuries, the amount of wetlands in Sweden decreased drastically: almost all original wetlands in agricultural areas

have disappeared through drainage and land reclamation. This has affected many of the plants and animals that depend on these types of environments.

An inexpensive way to reduce eutrophication

Over the last 15 years, nearly 3,000 wetland areas have been constructed in [agricultural landscapes](#) around Sweden. Farmers have the possibility of receiving economic support for this from sources such as the Swedish Board of Agriculture. The primary reason is because wetlands catch the surfeit of nutrients from agriculture such as nitrogen and phosphorus—substances that would otherwise have leaked out into the seas and lakes and contributed to eutrophication.

The study shows that creation of [wetlands](#) is a cost-effective to catch the nutrients.

"It's a very effective way of purifying the water. It's less expensive than constructing treatment plants, and in addition it contributes to [biological diversity](#)," Prof Weisner says.

The research study, which is a compilation of previous studies in the field, was written by Stefan Weisner of Halmstad University and John Strand of the Agricultural Society of Halland, and has been published in *Ecological Engineering*.

More information: "Effects of wetland construction on nitrogen transport and species richness in the agricultural landscape – experiences from Sweden", John. A. Strand & Stefan E.B. Weisner, *Ecological Engineering*, [dx.doi.org/10.1016/j.ecoleng.2012.12.087](https://doi.org/10.1016/j.ecoleng.2012.12.087)

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