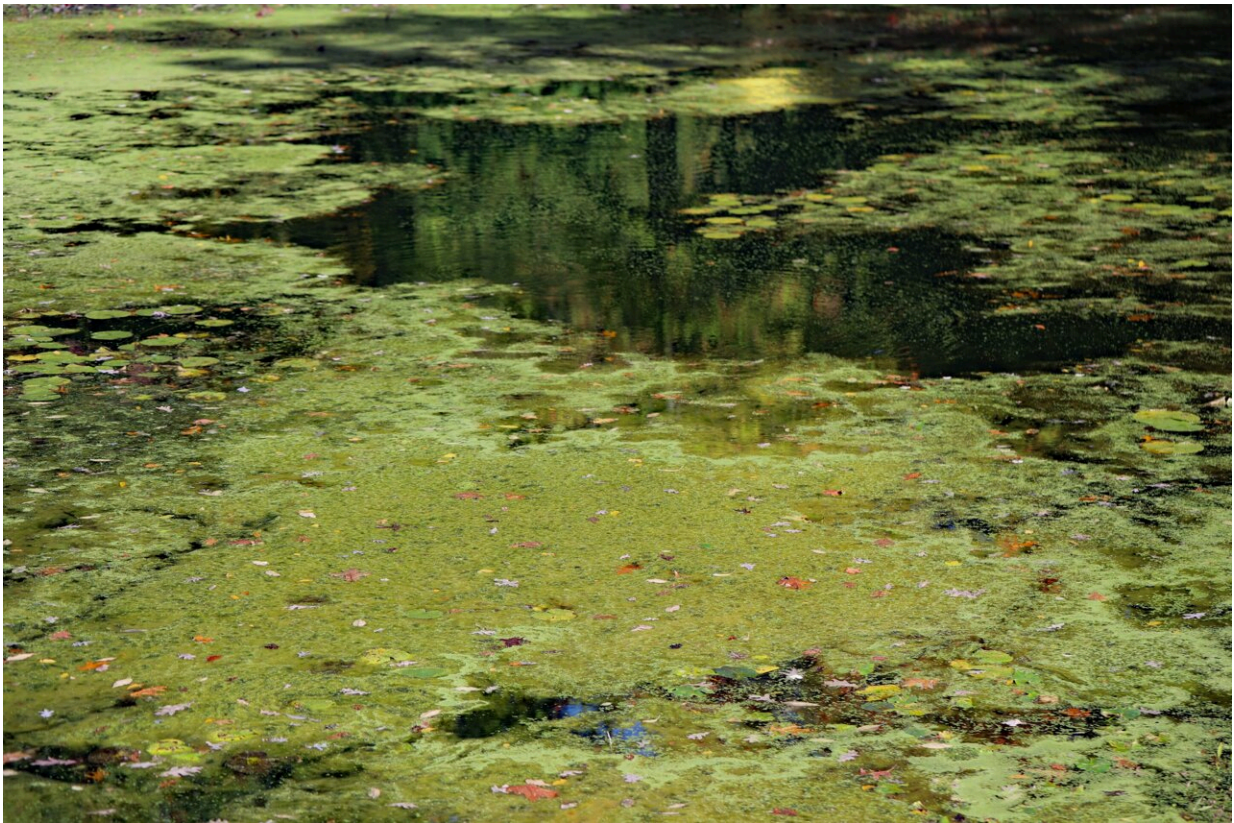


Stormwater management ponds may not hold the solution for depleting wetlands

August 11 2022



Credit: Unsplash/CC0 Public Domain

Relying on stormwater management (SWM) ponds to restore the depleting wetlands is not sustainable and lacks the critical ecosystem services vital for biodiversity, a new study found.

With the continued losses of [wetlands](#) projected in the near future and emphasis on the underestimation of provincial wetland loss, the study captures the contributions of SWM ponds in a changing network of water bodies and the effects of land use and land cover in this change.

Waterloo researchers led by Waverley Birch examined wetland loss, SWM pond creation and land use-based trends in seven southern Ontario municipalities within the most populated ecozones in Canada from 2002 to 2010 using a geographic information system.

"Wetland loss contributes to loss of ecosystem services in Ontario, with the likelihood of natural disasters such as droughts and floods becoming more common in [urban areas](#)," Birch said.

For the years under study, the findings show that the total number of created SWM ponds was 1.6 times greater than the number of wetlands lost for all municipalities combined and that an overall rate of 0.13 percent of wetland area was lost per year.

"This is concerning because of the low proportion of wetlands left in these areas and the fact that the average SWM [pond](#) was smaller than the average lost wetland, which poses a big environmental challenge," Birch said.

The researchers argue that wetland losses will continue with trends towards their replacement by SWM [ponds](#). They observed that losses are concentrated among wetlands that are generally not protected by provincial policies because of their [small size](#).

"We recommend that protections be strengthened for wetlands of all sizes, in turn protecting communities by retaining the important ecosystem services that are vital for biodiversity as well as [human health](#) and wellbeing, which wetlands provide," Birch said.

The study, authored by Waterloo's Birch, Michael Drescher, Jeremy Pittman and Rebecca Rooney, was recently published in the *Journal of Environmental Management*.

More information: Waverley S. Birch et al, Trends and predictors of wetland conversion in urbanizing environments, *Journal of Environmental Management* (2022). [DOI: 10.1016/j.jenvman.2022.114723](https://doi.org/10.1016/j.jenvman.2022.114723)

Provided by University of Waterloo

Citation: Stormwater management ponds may not hold the solution for depleting wetlands (2022, August 11) retrieved 13 March 2024 from <https://phys.org/news/2022-08-stormwater-ponds-solution-depleting-wetlands.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--