



Great Lakes Phosphorus: Overview

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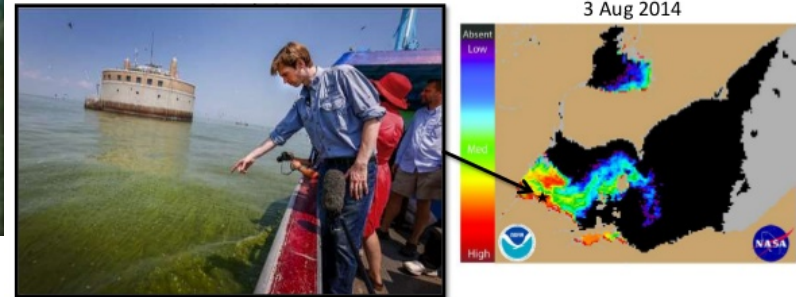
June 13, 2016

Context



Toledo drinking water crisis

- Over 400,000 people had no drinking water for 3 days (Aug 4-6)
- Microcystin toxin was above World Health Organization's limit of 1 $\mu\text{g/L}$



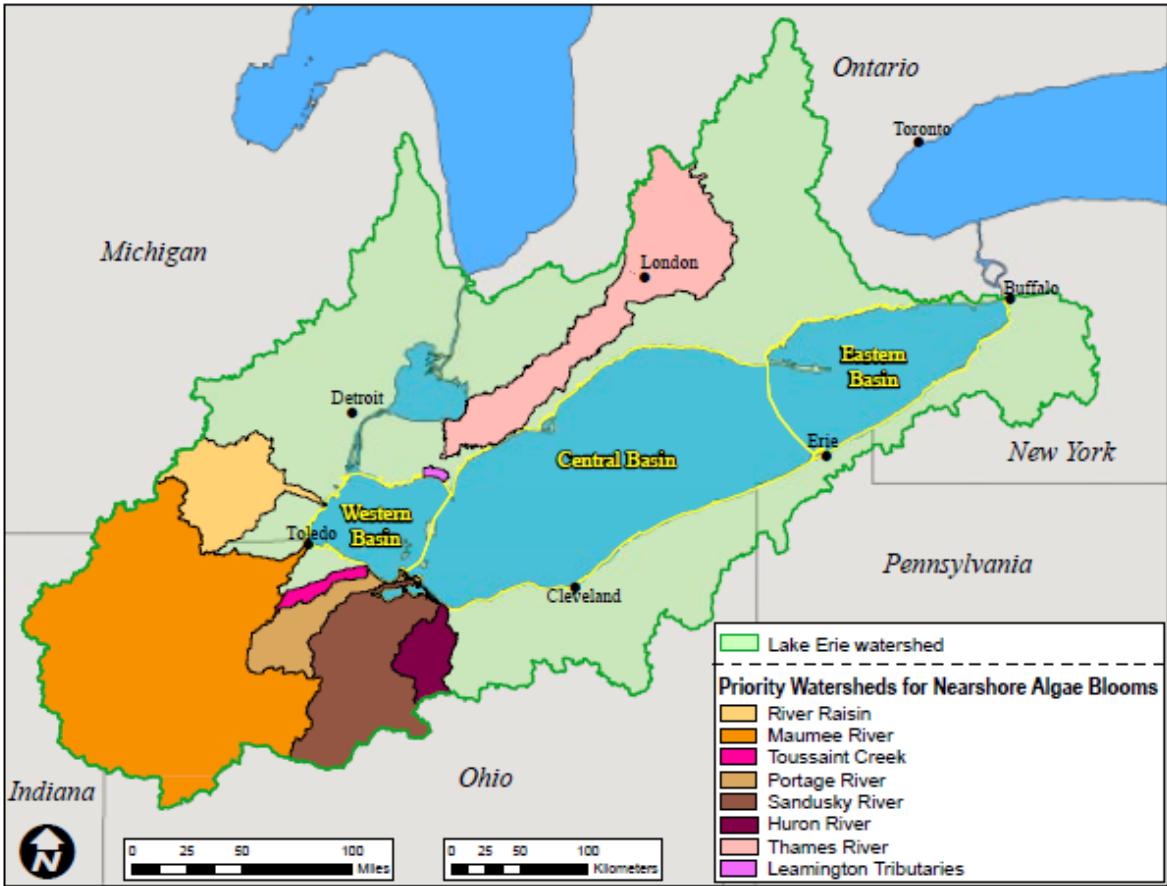
News Release

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 Environment and Climate Change Canada Environment et Changement climatique Canada

Governments of Canada and the United States announce phosphorus reduction targets of 40 percent to improve Lake Erie water quality

Priority Watersheds



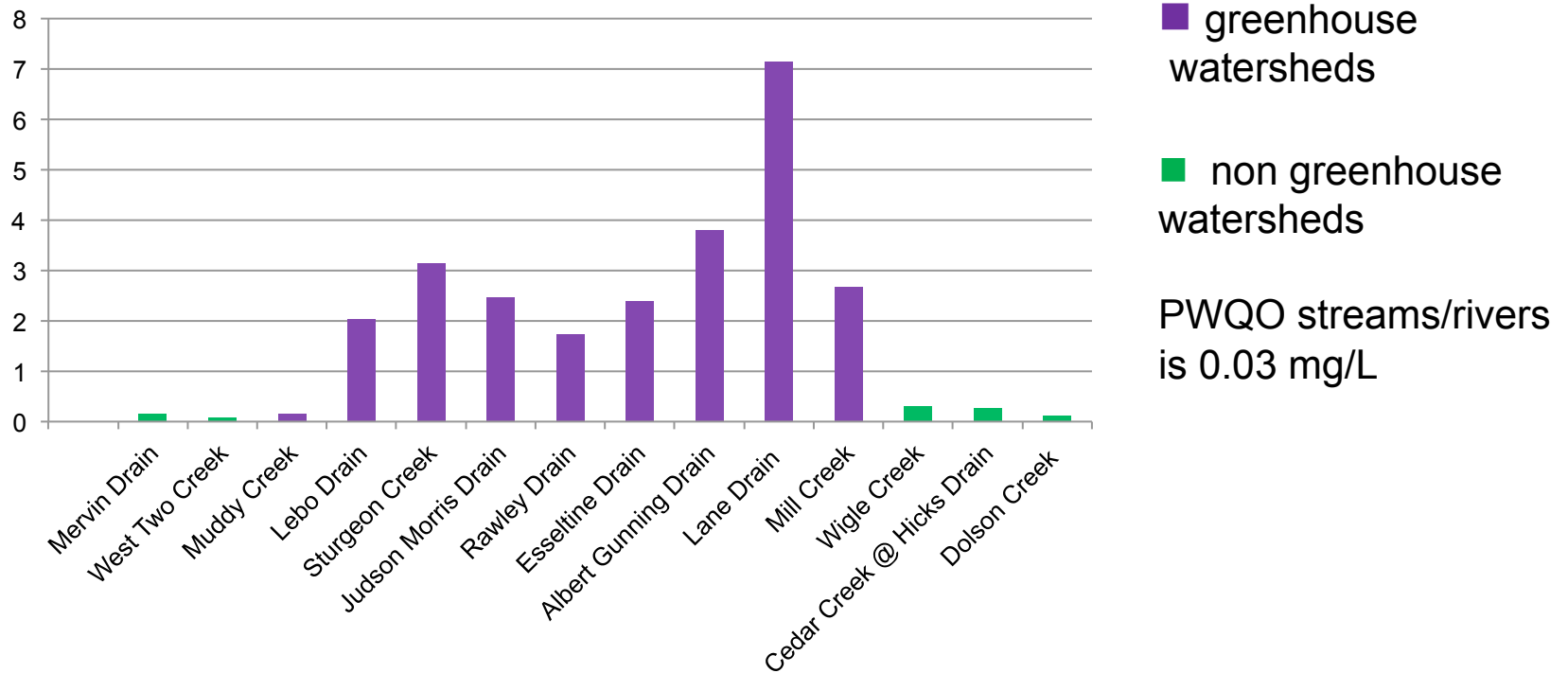
Map of Lake Erie Priority Watersheds. Created by U.S. Environmental Protection Agency.

Context

- Greenhouses have been identified as a source of phosphorus into Lake Erie
 - ~ **25 tonnes of P from greenhouses** as compared to Canada's 212 P tonne
- MOECC completed water sampling of the watersheds around Leamington and Kingsville
- Watersheds with significant greenhouse development were found to have high phosphorus concentrations

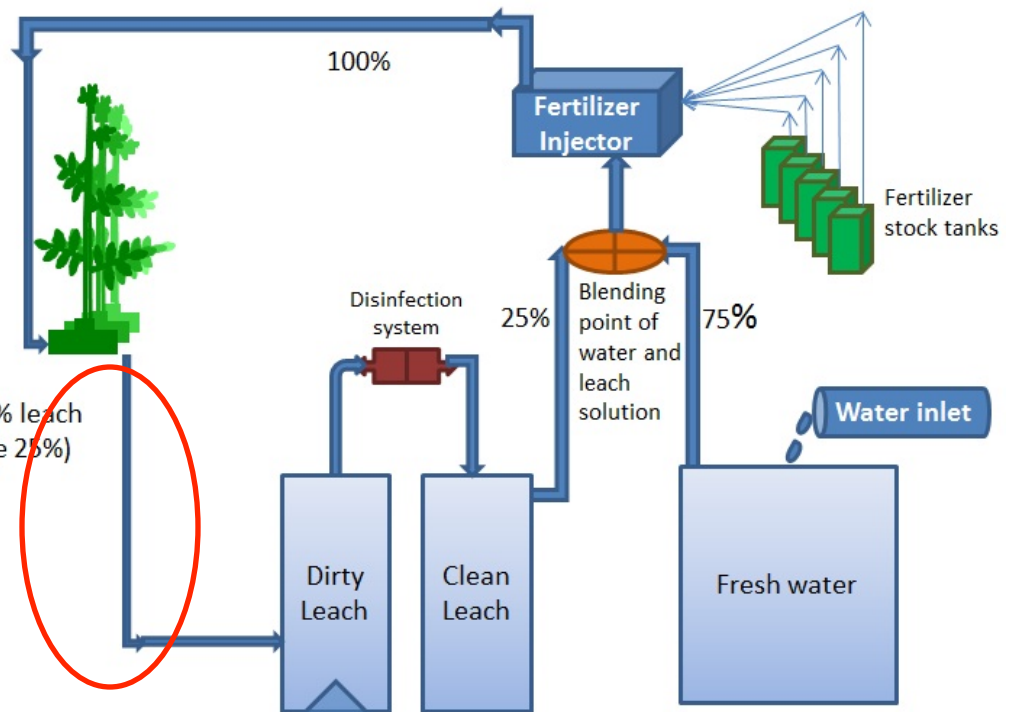
Context

- Results from 2014-2015 testing in Leamington and Kingsville watersheds (phosphorus concentrations in ppm)



- Main source of P from greenhouses:

Nutrient Solution in a Closed Circulation System



**Leachate not
being managed
properly**

Ontario Greenhouse Environmental Strategy

- Partnership between:
 - OGVG/FCO, OMAFRA and MOECC
- Objectives:
 - Improve environmental performance and economic successes of the greenhouse sector in Ontario
 - Mitigate impacts of discharges to achieve environmental standards
 - Guide the greenhouse sector to improved environmental performance and compliance

Response

- OMAFRA, OGVG and FCO working with growers to develop solutions to nutrient losses
 - On-site assessments
 - Developing communications materials
 - Workshops / Education
- Some growers working proactively to improve nutrient management

Key Messages

- Work towards 100% recycling of all leachate in your system
- Leachate cannot be discharged to storm water system (including ponds)
- Leachate cannot be discharged to surface water, without a MOECC-issued ECA
- MOECC addressing issues of non-compliance

Priorities Moving Forward

- Providing information on the impacts of nutrient loss to the environment
- Educating growers on lawful options for disposal of leachate
- Providing support for growers on approval requirements
- Contingency Planning
- Building Redundancy

Thank you!

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