TOO MUCH OF A GOOD THING

REDUCING PHOSPHORUS LOADS TO THE SYDENHAM RIVER WATERSHED

SOURCES OF PHOSPHORUS

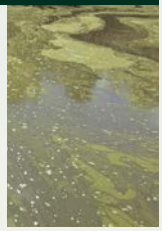
Phosphorus is a nutrient essential to life. It is found in all plants and animals and their waste.

The main sources of excess phosphorus to the aquatic environment are discharge from wastewater treatment plants and the cumulative impact of diffuse sources from across the landscape including fertilizers, manure, and septic systems.

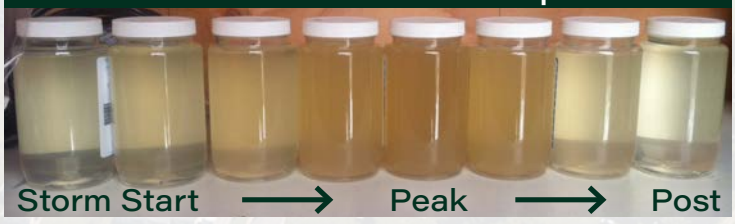
The movement of phosphorus off the landscape into the water is closely tied to runoff from heavy rains and snowmelt.

#1. Stormwater Runoff

#3. Algal Blooms



#2. Storm Event Stream Samples



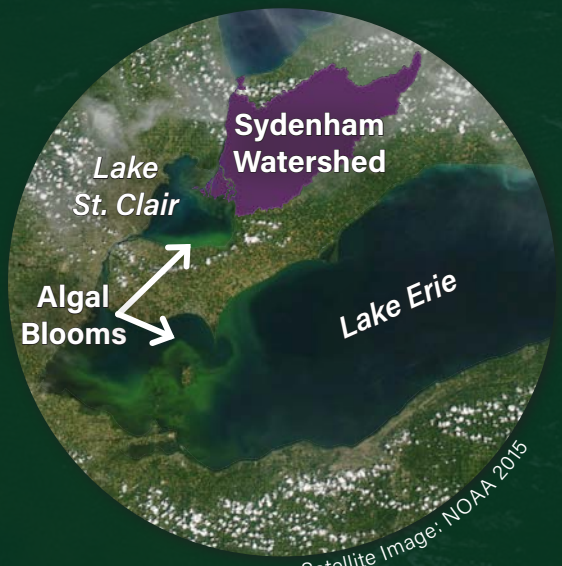
(1) Phosphorus and soil are washed off exposed land; (2) Streamwater samples collected automatically every two hours during a storm event show phosphorus and sediment levels in streams increase; (3) Algal blooms result from excess phosphorus reaching waterbodies.

THE ISSUE

Algae are a natural part of the ecosystem but when excessive amounts of phosphorus enters the aquatic environment, it feeds the explosive growth of algae.

Algal blooms can be toxic, pollute shorelines, and lower the oxygen in water needed for life. They threaten the safety of water for drinking, recreation, and wildlife.

The Lake Erie basin has been plagued by algal blooms, which is why Canada and the U.S. are working together to reduce phosphorus loads to the lake by 40% from 2008 levels.



Satellite Image: NOAA 2015

THE SYDENHAM

Excess phosphorus in the Sydenham Watershed degrades local water quality and helps feed algal blooms in local streams, Lake St. Clair, and Lake Erie.

The Sydenham Watershed is the third largest Canadian contributor to the phosphorus load in the Lake Erie basin. The majority of this phosphorus (89%) originates from diffuse sources while 11% is from wastewater treatment plants.

Background Image: Zachary Haslick

WHAT CAN WE DO?

PREVENT, CONTROL, AND CAPTURE STORMWATER RUNOFF

1. PREVENT

- **Build soil health** (increase organic matter, adopt conservation or no-till practices, diversify crop rotations to build more resilient, less erodible soils)
- **Keep soils covered year-round** (reduce erosion by retaining crop residue, planting cover crops, and by using ground covering plants or mulch in gardens)
- **Adopt nutrient best management practices** (use the right nutrients at the right rate, time, and place)
- Test soils and drawdown phosphorus that may have built up in the soil
- Retire marginal farmland
- Manage manure appropriately (ensure sufficient storage, do not apply to frozen ground)
- Restrict livestock from watercourses
- Regularly inspect and maintain your septic system

Image: D. Rogers

2. CONTROL

- Construct sediment and erosion control structures
- Install controlled drainage
- Create grassed waterways
- Construct wetlands and sediment ponds
- Plant rain gardens
- Use rain barrels at downspouts
- Reduce paved and increase permeable surfaces

3. CAPTURE

- Retain forested areas
- Plant vegetated streamside buffer strips
- Use saturated buffers for tile drain outlets

LEARN MORE

Want to explore maps, data, tools, and reports related to phosphorus in the Sydenham?

Interested in joining us for expert-led and peer-to-peer knowledge sharing events?

Are you a farmer or rural landowner interested in funding support for stewardship projects?

Learn more at: sydenhamriver.on.ca/water

Financial support provided by:

The Government of Ontario

Environment and Climate Change Canada

St. Clair Conservation