

# St. Clair watersheds targeted for phosphorus reduction

Buffer strips, wetlands and improve fertilizer usage can all help

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Farmers in Southwestern Ontario, especially those living within the Sydenham and Thames river watersheds, are being asked to do more to reduce phosphorus loading in Lake St. Clair.

Practices have been identified that can make a difference. Researchers have also generated data to better identify the various sources.

Speaking to the issue at Soil Health Day in Alvinston on February 12 were environmental engineer Donald Scavia with the University of Michigan and hydrology expert Awoke Dagnew with the Detroit office of Environmental Consulting & Technology.

Scavia said the Detroit River, which flows out of Lake St. Clair, is estimated to contribute 41 per cent of the total phosphorus load entering Erie's Western Basin. That compares to 48 per cent entering from the Maumee River at the lake's western end.

He also related a great deal of information concerning the phosphorus entering Lake St. Clair but suggested people interested in supporting phosphorus reduction think more about how they can help rather than what may or may not be their fair contribution to the effort.

"We tend to argue about what the numbers should be rather than doing anything about it," Scavia said.

"What we should do is take action, make adjustments to those actions and keep moving ahead."

About 58 per cent of the phosphorus flowing into Lake St. Clair comes from Lake Huron and there's not a great deal that can be done to reduce that number to any great extent. In addition, Detroit's water resource recovery facility has already been improved.

That leaves the focus for reductions on the watersheds, both in Michigan and Ontario, that empty into Lake St. Clair. The Thames contributes about 10 per cent of the load and the Sydenham four per cent. The combined watersheds on the Michigan side contribute around 10 to 11 per cent.

The watersheds are places where interventions can make a difference but the reductions would need to be large, perhaps as great as 72 per cent, if the 40 per cent reduction target for Lake Erie is to be realized.

Other considerations include heavy precipitation events and soil type. It's also known that zebra and quagga mussels, both invasive species, contribute to phosphorus reduction and that Lake St. Clair retains about 20 per cent of the phosphorus that enters it, primarily as sediment that settles in the deeper parts of the lake.

Dagnew's comments focused on reduction options.



The Sydenham River is one of only three locations in the world where the population of Northern riffleshell mussels remains healthy.



According to Awoke Dagnew with Environmental Consulting & Technology, a variety of measures are needed to reduce the level of phosphorus entering Lake St. Clair.

He said research has shown that conservation tillage has only a minor impact while controlled drainage had either no benefit or could even



Dave Balint with Fisheries and Oceans Canada provides assessment species of risk across much of Canada but is most familiar with Southern Ontario where the level of ecosystem diversity is greatest.

increase the phosphorus load. Practices that can significantly reduce phosphorus loading include reducing fer-

tilizer rates, improving fertilizer placement such as moving to below-ground banding, adding filter strips along waterways and filtering agriculture runoff through wetlands.

"There are multiple pathways to reach phosphorus reduction goals but extensive implementation of multiple practices is required," Dagnew said.

Other speakers at the Alvinston event included species-at-risk coordinator Dave Balint with Oceans and Fisheries Canada who focused his comments on one of Canada's ecosystem treasures, the Sydenham River.

He said there are 80 species of fish and 35 species of mussels that call the river home, including 20 that are listed as species of risk. The Northern riffleshell mussel is one. Stable populations are found in the Sydenham and in only two other locations, globally.

Challenges for the river include sedimentation, toxic contaminants, exotic species like the zebra mussel, nutrient loading, excessive water temperatures and alternations to flow that may impact fish movement.

All terrain vehicles should stay out of the Sydenham, especially they're moving up and down the river, Balint said. They pose a risk to resident mussels and other river inhabitants.

"One of the best things farmers can do to help is to incorporate buffer strips in their practices," he said.

Better managing fertilizer and manure use and reducing the use of road salts can also help.



Four-wheeler and other vehicles travelling shallow parts of the Sydenham can harm the sensitive mussel population.