

The Minnesota Buffer Law recently passed will do little to improve water quality. Check out some of Dr. Lobb's research at the University of Manitoba for answers why. http://umanitoba.ca/faculties/afs/dept/soil_science/people/davidlobb.html
Dr. Lobb spoke at the Int'l Crops Expo in Grand Forks in February. The Farm & Ranch Guide article below covers some of his presentation.

http://www.farmandranchguide.com/news/crop/buffer-strips-may-actually-increase-watershed-pollution/article_729be4ac-2854-11e7-ba62-2fd599dbd1f5.html

FEATURED

Buffer strips may actually increase watershed pollution

By DALE HILDEBRANT Farm & Ranch Guide Apr 24, 2017

GRAND FORKS, N.D. – Have we been heading down the wrong path in terms of reducing pollution from streams and rivers? We have, according to David Lobb, University of Manitoba professor in the Department of Soil Science.

He presented his findings at the recent International Crop Expo in Grand Forks.

In his presentation, he looked at water pollution from two different sources – the first being the sediment that is deposited into our streams, rivers and eventually into the lakes; and secondly, the nutrients, especially phosphorus, that are being washed into these waters and ending up in Lake Winnipeg.

He based his findings on an on-going Canadian research program that is made up of several projects and involves the collaboration of several scientists. Funding for the program has been provided by a variety of agencies and it involves the development and application of many sediment collection techniques and what he calls sediment fingerprinting techniques as a way to source and track sediments moving through the Nelson River system in Manitoba that includes the Red River.

Where does the sediment come from? The vast majority of the sediments, which leave the watershed and are presumed to end up in lakes like Lake Winnipeg, are actually coming from the banks of the streams and rivers and not from the agricultural land that drains into those streams, he said.

“When I was a student, I was always told that gully erosion and streambank erosion was around 15 percent of the sediment load of most watersheds,” Lobb said. “It turns out it’s not 15 percent, but 85 percent of everywhere people look. The vast majority of erosion is actually coming from streambanks.”

Where does the phosphorus come from? Most of the phosphorus that ends up in the lake is actually coming from the runoff (dissolved phosphorus), and not the sediment, he said. That phosphorus is coming from the plant residue in the fields and surrounding the waterways, such as ditches, streams and rivers and not the soil. “This extends beyond vegetation in the field, and this point is important particularly to people in Minnesota, to the riparian areas, because vegetation in riparian areas can actually be a source of phosphorus, not a sink.

“The vast majority of our water and nutrients leave our landscape when the land and vegetation are frozen and riparian areas cannot work in that situation. We have also found that conservation tillage and forages, because vegetation is left on the surface over winter, can actually result in increased phosphorus losses.”

Most of his studies have been conducted in climates in northern Minnesota, North Dakota and the Province of Manitoba, where the peak runoff from snow melt will occur when soils are still frozen and there is no vegetation growing in the riparian areas.

Those areas may have some function in lowering phosphorus in runoff when there is vegetation growing during runoff, but even then runoff concentrates into narrow paths and largely passes through riparian areas.

“I suspect it is different in the southern part of Minnesota, but it probably still is not great,” he said, “and when we have looked at it, we have found the riparian areas to actually have no net decrease in phosphorus loss, and have the potential to increase phosphorus loss.

“By encouraging riparian areas that are unmanaged and poorly designed, you risk creating more of a problem and we have been stating this for the last two or three years.”