

Exploring Nutrient and Sediment Transport from Agricultural and Urban Landscapes

A paper published in the December 2016 edition of PLOS ONE, a multidisciplinary research journal, provides useful context for water quality discussions. Based on data collected from 2007 to 2013 in Kandiyohi County, “Comparison of Contaminant Transport in Agricultural Drainage Water and Urban Stormwater Runoff” quantifies and compares sediment, phosphorus and nitrogen losses from both farm fields and urban lands representative of the region.

This long-term analysis reinforces the importance of addressing potential pollution issues in both urban and agricultural landscapes while also noting that the areas of concern are different between the two. The paper concludes that management practices should be directed to load reduction of ammonium and total suspended solids from urban areas, and nitrate from cropland, while phosphorus should be a target for both.

Given the extent to which urban areas continue to grow while cropland area shrinks, this information serves as a helpful reminder that barring some dramatic new breakthrough in technology or engineering, water quality efforts need to account for some unavoidable impacts due to both land uses. Caution must be exercised in scaling up the results or applying them to other watersheds or different climate conditions, though the study period did include a range from relatively wet to dry year. Readers may also be surprised to note that the ratio of cropland to urban area in the studied watershed is 4.6:1, much lower than often presumed. For comparison, the statewide ratio is 5.8:1.

See the full article at: <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0167834>.

Report Highlights Conservation Gains

Responding to questions from consumer groups and major food suppliers, Field to Market, a multi-stakeholder initiative of grower organizations; agribusinesses; food, beverage, restaurant and retail companies; conservation groups; universities; and public sector partners identified an agreed upon set of factors contributing to sustainability. Their recently released analysis of sustainability trends examines eight environmental indicators and five social and economic indicators and is based on publicly available data, published government reports and scientific literature.

The report evaluates ten crops, including seven grown in Minnesota, at the national scale. While the numbers cannot be used to assess an individual farm or state, the approach outlined can provide reference values for comparison, and a framework that an individual farmer could use to evaluate their own farming practices.

The report concludes that “the crops assessed have produced more yield on less land with improved environmental outcomes on a per-unit-of-production basis. This continued improvement has also contributed to reduction in loss of soil carbon. This significant progress toward more sustainable food, feed, fiber, and fuel production is a result of many different technological advancements and greater adoption of conservation practices.”

It is encouraging that conservation groups and the food processing sector, often more critical than supportive of farmers, are participants in this assessment effort and the resulting positive report.

Read more about Field to Market and access this and other reports at <http://fieldtomarket.org>.

Register Now for Nutrient Management Conferences

Registration is now open for two nutrient management conference to be held in February. These events, hosted by a team including the Minnesota Agricultural Water Resource Center (MAWRC), the University of Minnesota and the Minnesota Department of Agriculture, will highlight recent advances in effective and economical nutrient management presented by researchers, fertilizer industry experts and state agency officials.

The 9th Annual Crop Nutrient Management Conference, will be held on February 7, 2017 at the River's Edge Conference Center in St. Cloud, Minnesota. The conference program will focus on nitrogen and phosphorus management with significant emphasis on water quality considerations.

The 3rd Annual Nitrogen: Minnesota's Grand Challenge & Compelling Opportunity Conference, will be held on February 16, 2017 at the Verizon Wireless Center in Mankato, Minnesota. This conference will focus more specifically on nitrogen management and water quality issues.

Farmers, crop advisors and other nutrient management professionals are encouraged and invited to attend. The ongoing importance of efficient use of applied crop nutrients relating to farm profitability and food production economics combines with growing interest in the environment. Topics include phosphorus and nitrogen recommendations, updates on new and emerging practices, and information related to important issues like the Des Moines Waterworks lawsuit.

Both conferences provide opportunities for Continuing Education Units for Certified Crop Advisors. More information and registration information can be found at <http://mawrc.org/events/>.

These conferences are sponsored by the Minnesota Department of Agriculture, University of Minnesota Extension, along with numerous agricultural businesses and organizations.

Thanks to the support of our sponsors, registration for each event is only \$20, which can be paid on-line at the time of registration or at the door. There is no charge for registration for students. To register by phone, or for more information, call Jerome Lensing at 507-251-9101, or Dr. Fabian Fernandez at 612-625-7460.

Discovery Farm Publications Available Online

Curious about the results from our on-farm water monitoring program? You can find several helpful fact sheets summarizing data collected across Minnesota and Wisconsin at www.discoveryfarmsmn.org under the "resources" tab. Recently added publications cover topics relating to nutrient and sediment movement in tile lines and surface runoff. You might also find it useful to join the on-line conversation about these and other topics at www.agwaterexchange.com, a blog built around the Discovery Farms programs in both states.

The MAWRC is a non-profit research and education corporation comprised of 24 agricultural organizations working together to address water issues. For more information, go to www.mawrc.org.

