

National agricultural watershed study:

Improving on-farm and local water quality

For 25 years, Dale and Caroline Steppler have opened their minds to the notion of improving agricultural management through science. Now they're opening their land.

The Stepplers are participating in a watershed study led by Agriculture and Agri-Food Canada (AAFC) near Miami, Manitoba that will examine ways to improve water quality, both locally and throughout the larger drainage basin. Research in the form of beneficial management practices (BMPs) – a variety of science-based farming methods – is being conducted on a small watershed located on the Steppler farm. A range of BMPs will be tested at the Steppler's to assess their individual and collective impact on water quality.

“It is important as farmers that we understand our impact on the environment,” says Dale Steppler. “Overall, I think we are doing pretty well, but with education we can do a lot more. There are definitely things to be learned.”

Located in the South Tobacco Creek watershed, about 150 kilometres southwest of Winnipeg, the Steppler site is one of seven small watershed studies underway across Canada. This initiative is part of a four-year national project dubbed WEBs – the Watershed Evaluation of BMPs. Carried out with the participation of local producers, WEBs will focus on the effectiveness of BMPs towards reducing the potential impacts of agricultural activities on water quality. Funding for the WEBs project is provided largely through AAFC's Greencover Canada Program, with Ducks Unlimited Canada a key funding partner. While Deerwood Soil and Water Management Association (DSWMA), a local watershed organization, is playing a key role in BMP establishment and monitoring, a number of other government and non-government organizations are also contributing to the project.

“On the Prairies and particularly in Manitoba, nutrient loading to small watersheds can contribute to cumulative nutrient loads in rivers and downstream lakes,” explains Jim Yarotski, the WEBs project lead for Manitoba.

“We believe that beneficial management practices can reduce agricultural contributions to sediment and nutrient loading in streams,” says Yarotski. “However, the environmental and economic performance of these practices needs to be better evaluated. Results might have a huge impact on where our efforts are focused in the future.”

Five BMPs are being evaluated in the Stepler project: 1) comparing runoff nutrient and sediment loading from a zero tillage field to that of a conventionally tilled field; 2) developing a holding pond that captures runoff from a cattle containment area and monitoring its impact on water quality; 3) assessing the effect of converting annual cropped land to forages; 4) mechanically harvesting forage in a portion of the stream where the riparian area has been fenced off from cattle access, while limiting cattle grazing to control vegetation in another riparian area; and 5) examining the effectiveness of small local reservoirs in reducing throughput to downstream nutrient levels.

Although various BMPs have been evaluated in the past on small test plots and individual fields, the WEBS project marks new territory for assessing BMP effectiveness in a small watershed setting. Results of this research will be applied to larger watersheds using computer models.

For more information on the Stepler WEBS project, please contact:

Jim Yarotski, Agriculture and Agri-Food Canada
Phone: (306) 780-6516
E-mail: yarotskij@agr.gc.ca

For more information on the Greencover Canada Program, visit the web site at:

www.agr.gc.ca/greencover-verdir

- 30 -

Article prepared by Agriculture and Agri-Food Canada – February 2006