

National agricultural watershed study:

Improving water quality in the Thomas Brook

Nutrient management plans have become a way of life for Nova Scotia's Thomas Brook Watershed, where more than 80 per cent of the drainage area's agricultural land is being managed to improve water quality.

These plans have been implemented by producers who are participating in a study led by Agriculture and Agri-Food Canada (AAFC) and the Nova Scotia Agricultural College (NSAC). Research will focus on the application of science-based farming methods called beneficial management practices (BMPs) as a means of improving water quality within the local watershed and downstream.

The Thomas Brook project is one of seven similar watershed studies underway across Canada. This initiative is part of a four-year national project dubbed WEBs – the Watershed Evaluation of BMPs. WEBs will focus on the effectiveness of BMPs in reducing the impacts of agricultural activity 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. A number of other government and non-government organizations are also contributing to the project.

The 760 hectare Thomas Brook Watershed is located north of the town of Berwick in the Annapolis Valley, an area renowned for its fruit, berry and vegetable production.

"The watershed is typical of most intensively farmed areas of the Maritimes," says Dale Hebb, AAFC's WEBs project lead in Nova Scotia. "The area is facing considerable environmental challenges from urban encroachment, and at the same time agricultural operations are becoming more intensive. As a result, water quality is being compromised."

"This project will provide a better understanding of water quality issues and the contribution agriculture makes to them," Hebb says. "We will be evaluating both the economic and the environmental benefits of the BMPs."

The nutrient management plans being used employ a balance between applied nutrients and crop demands and take into account the nutrient composition and application of animal waste. The implementation of these plans is one of three BMPs being applied in the watershed.

"A runoff management project was established on one farm within the watershed," says Dr. Robert Gordon of the Nova Scotia Agricultural College. "Through the actions of the

Nova Scotia Environmental Farm Plan Program, a comprehensive water management plan has been implemented to reduce on-farm runoff and its effect on downstream water quality.

“In another area, fencing and alternative watering systems have been installed to partially exclude cattle from the streams in an attempt to reduce potential manure contamination and minimize stream bank disturbances,” Gordon says.

“The Thomas Brook project is an important part of our Environmental Farm Management Strategy,” says Laurence Nason, CEO of the Nova Scotia Federation of Agriculture, a partner in the project. “Without federal funding, we wouldn’t have been able to do this. It allows us to develop the programs we need to serve the environment.”

“Like much of Atlantic Canada, the land people want to farm is also the land where people want to live,” says Nason. “We realize, as producers, we must share the water resources with others and take special care in protecting them for the community and for ourselves as well.”

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.

“The impact of the BMPs will be evaluated by comparing historic data with data collected following BMP implementation,” says Gordon. “With Thomas Brook, we can assess the impacts at a watershed scale which will hopefully serve as a model for other watersheds in Atlantic Canada.”

For more information on the Thomas Brook WEBs project, please contact:

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

www.agr.gc.ca/greencover-verdir