

Watershed Evaluation of BMPs (WEBs)

An Overview of the WEBs Project

What is WEBs?

WEBs, the Watershed Evaluation of beneficial management practices (BMPs), is a \$5.65-million project led by Agriculture and Agri-Food Canada (AAFC). It is largely funded through AAFC's Greencover Canada program. Ducks Unlimited Canada, a key partner, is contributing \$1.25 million to the project.

BMPs are farming activities designed to help minimize potential environmental impacts, such as sediment and nutrient runoff into water bodies. WEBs will measure the relative *environmental* and *economic* effects of selected BMPs on water quality. WEBs tests will occur at the micro-watershed level (i.e. watersheds about 300 hectares in size). The study will occur from 2004 to 2008.

Where will WEBs be conducted?

The WEBs project team will conduct studies at seven sites across Canada where the long-term history of conditions and trends is already generally well understood. Through the WEBs initiative, it is anticipated that these sites will continue as long-term benchmarks for watershed health.

A range of BMPs will be tested at the various sites to evaluate their effectiveness, including:

- land conversion (annual crop to grassland)
- riparian buffer strip enhancement
- management of livestock access to water
- nutrient management

The seven WEBs watersheds may also be the focus of compatible watershed studies conducted by other government and non-government agencies, some of which will directly participate in WEBs studies.

Why study BMPs in watersheds?

To date, the effectiveness of individual BMPs has been tested primarily on plots or small fields, with results extrapolated to watersheds. But plot and field tests may not address the compounding variables that occur in watersheds. For this reason, field-scale modelling might not accurately predict watershed effects.

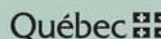
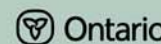
Through WEBs, the project team hopes to see the actual effects of BMPs at a micro-watershed scale. In addition, the team is optimistic that the findings may be extrapolated to apply to somewhat larger watersheds, using appropriate modelling techniques.

The WEBs study will focus on the effect of BMPs on the quality of surface water, since it is a likely predictor of other environmental factors such as soil quality, air quality, and biodiversity. In some cases, the quality of groundwater will also be considered.

What is the WEBs approach?

The WEBs study approach includes:

- projecting the impact of applying individual BMPs or a suite of BMPs to portions of a particular watershed;
- working with local landowners and watershed agencies to apply appropriate BMPs; and
- monitoring the net effect of BMPs on water quality.



The WEBS project team will use techniques such as historic benchmarking, paired watersheds, upstream and downstream monitoring, and edge-of-field testing to help determine the effectiveness of the BMPs.

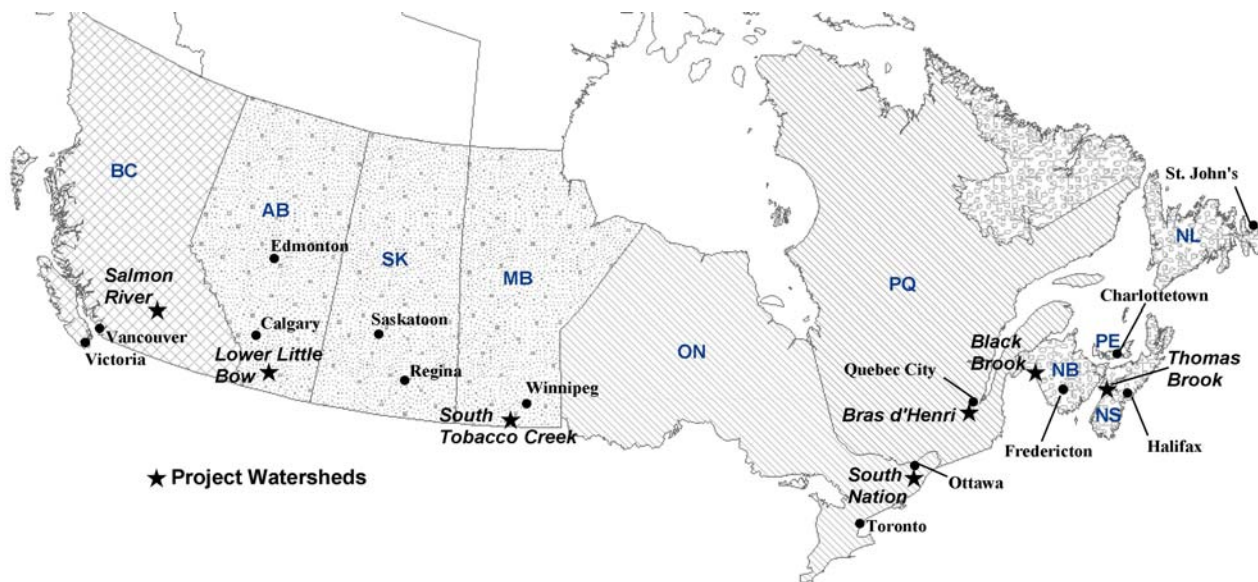
In most cases, WEBS will test separately the effectiveness of individual BMPs. In all cases, the study will determine the net effect of watershed-specific BMP mixes on water quality.

What are the economic considerations?

The WEBS project will document the development of each site to ensure that any information needed for economic analysis is collected. Data collected will include existing farming practices and costs, such as measuring and calculating nutrient balances and tracking the costs of BMP application.

This information will help WEBS measure the direct economic impact of BMPs on farming in the project area and the general benefits and costs to society.

WEBS Project Watershed Sites Across Canada



Additional Information

To find out more about the WEBS project, visit the **Greencover Canada Web site** at: www.agr.gc.ca/env/greencover-verdir, or contact:

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