

National agricultural watershed study:

Improving water quality on the Lower Little Bow

Keeping cattle out of the water is not only good for the environment, it's good for the cattle too.

That's why the Turin Hutterian Brethren colony near Lethbridge was more than happy to help test a new stock watering system featuring an off-stream dugout that supplies three remote stock watering stations. Installed by Agriculture and Agri-Food Canada (AAFC) as part of a national study, the project will help evaluate the effectiveness of beneficial management practices (BMPs) – science-based farming practices – in reducing the potential impacts of agriculture on water quality.

Located in the Lower Little Bow River Watershed, just north of Lethbridge, the Turin study is one of seven taking place in designated watersheds across the country. It's all happening under WEBs – the Watershed Evaluation of BMPs – a four-year national project being carried out with the participation of producers in each of the watersheds. Funding for the WEBs project is provided largely through AAFC's Greencover Canada program, with Ducks Unlimited Canada a key funding partner. While the County of Lethbridge is playing an important role in BMP establishment and producer liaison, a number of other government and non-government organizations are also contributing to the project.

“Land use in the Lower Little Bow River Watershed is fairly representative of the region,” says Jim Miller, AAFC's WEBs project lead in the area. “There's a mix of native rangeland, dryland farming, intensive irrigated row-crop farming, and intensive livestock operations. There's also considerable information available on this watershed that we can use as a baseline for our research.”

The new dugout on the Turin Colony was constructed to serve a cattle over-wintering pasture for up to 450 head of cattle.

“Our cattle used to drink directly from the river. We're hoping that with access to clean water at the watering stations, they won't go to the river to drink,” says Chris Waldner, a spokesperson for the Turin Colony. “By keeping the cattle out of the river, we get better herd performance and improve water quality at the same time.”

The dugout is filled with groundwater from a nearby irrigation pivot. From the dugout, water passes into a wet well where it is piped underground to three water stations

throughout the pasture - one of which is more than a kilometre away. With the watering stations at different locations in the pasture, cattle manure is likely to be more evenly distributed, thus avoiding accumulations near the river.

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 stock watering project is just one of three BMPs being tested at the colony. The effect of different types of buffer strip vegetation and buffer strip width on runoff water quality from irrigated fields is also being evaluated. As well, the impact on water quality of converting nearby cropland to perennial cover or forages is being studied.

Land owned by another producer within the watershed is being used to test a manure management plan BMP. Fresh beef feedlot manure will be applied according to crop uptake of nitrogen versus phosphorus, and different combinations of applications will be examined over a four-year period.

For more information on the Lower Little Bow WEBs project, please contact:

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

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