

LIVESTOCK PRODUCTION AND PHOSPHORUS MANAGEMENT



ALBERTA PHOSPHORUS WATERSHED PROJECT



Agriculture and Forestry (AF) and the Intensive Livestock Working Group (ILWG) have initiated a three-year study to develop and test a phosphorus risk management tool, the Alberta Phosphorus Management Tool (APMT), designed to reduce nutrient loss from agricultural areas. The project team works directly with producers in two selected agricultural watersheds in Alberta. Study objectives include:

- Develop a tool that helps producers evaluate the risk of phosphorus loss from their operation/land base, and recommend beneficial management practices (BMPs) to address the risks.
- Implement as many BMPs as possible in selected watersheds using the APMT.
- Evaluate BMP effectiveness on improving water quality at a watershed - wide scale.

Working closely with the producers in the two study watersheds, the APMT will be used to assess the risk of phosphorus loss based on landscape and environmental risk factors. In consultation with the producers, BMPs will be identified and implemented broadly throughout the watersheds. The APMT will be evaluated in terms of ease of use and effectiveness to identify and address risk. To verify BMP effectiveness water samples from the watersheds will be collected and analyzed for water quality parameters over a five year period.

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The Challenge

Nutrients, such as phosphorus, from manure and inorganic fertilizer are essential for crop production. However, they must be managed properly to reduce the risk of these nutrients leaving the landscape and entering water bodies. Nutrient additions to water bodies can promote aquatic plant and algae growth, a process called eutrophication, which can lead to degraded water quality, oxygen depletion, release of toxins, and odours.

To address the challenge of nutrient loss a variety of approaches need to be used. This factsheet outlines some of the activities that are currently being implemented as well as potential opportunities to enhance those efforts to address nutrient loss from livestock production.

Legislation

In the early 2000's the livestock industry petitioned the province to work with them to develop regulations that would bring clarity and consistency to the permitting process for confined feeding operations as well as manure management rules for all agricultural operations.

The purpose of the Agriculture Operation Practices Act (AOPA) is to ensure that the province's livestock industry can grow to meet the opportunities presented by local and world markets in an environmentally sustainable manner.

The Act and its associated regulations set manure management standards for manure storage facilities and manure application, incorporation, and record keeping requirements to protect surface and ground water.

A compliance process for dealing with manure management concerns and complaints is outlined in the Act.

The Natural Resources Conservation Board is responsible for the administration and enforcement of AOPA and its regulations, including permitting confined feeding operations and addressing complaints.

Developing Solutions

Over the past several decades the government and industry groups have initiated and/or participated in multiple initiatives to determine impacts and develop mitigation strategies that reduce the risk of nutrients from livestock productions being transported to water bodies. A few examples include:

- The Alberta Environmental Sustainable Agriculture Water Quality Monitoring Project
- Alberta Soil Phosphorus Limits Project
- Lower Little Bow River and Battersea Drain Surface Water Quality
- Nutrient Beneficial Management Practices Evaluation Project
- Water Quality Modelling
- Water Quality in the Irrigation Districts

Financial Support

Federal/Provincial programs have been developed to help support the cost of BMP adoption. As a result programs, such as the current Growing Forward suite of programs, have resulted in the adoption of BMPs that reduce the risk of agricultural contaminants from entering water sources. Programs include the Agricultural Watershed Enhancement Program, Confined Feeding Operations Stewardship Program, and the On-Farm Stewardship Program.

The next policy framework is being negotiated; what that program supports will be developed through consultation.

In addition, some municipalities, on their own or in cooperation with other NGOs, have developed their own financial support programs to support the adoption of BMPs related to water quality. These programs are based on the specific needs of an area or the goals of the local Ag Service Board/Council.

Other non-government funding programs are available to support practice change. Programs such as Alternative Land Use Services are delivered through municipalities, while others may be directly delivered through an NGO such as Ducks Unlimited supported programs.



Key to Success

Essential to the delivery and successful uptake of these cost share and extension programs is on the ground support by local staff.

Having

a local extension agent is key to helping producers access these programs, as it provides them with a second set of eyes to evaluate situations, and someone to collaborate with to develop BMP projects so

Providing Solutions

A number of extension and policy activities related to water quality were developed and delivered by Industry organizations, Federal and Provincial Government agencies, NGO's and Not-for-profit organizations a few examples include:

- Environmental Sustainable Agricultural Programing (financial support for local staffing)
- Environmental Farm Plan and the Wintering Site Assessment and Design Tool (self-assessment tools)
- Environmentally Sustainable Agriculture (ESA) Tracking Survey
- Nutrient Management Planning Guide, BMP Manuals, Factsheets
- Catch Basin Pilot
- Funding Support of the Alberta Riparian Habitat Management



AF and Industry groups are cooperating on tailored messaging and development of information sheets to better meet the needs of their producers.

Additional information

Bow River Phosphorus Management Plan
aep.alberta.ca/

Alberta Agriculture
www1.agric.gov.ab.ca

Contact Information

Rob Wolfe
Environmental Planner,
Alberta Environment and
Parks
Phone: 403-297-5383
email: rob.wolfe@gov.ab.ca