

Indianfarm Creek Watershed News

Spring 2008

Nutrient Beneficial Management Practices Evaluation Project

Keeping you informed

This newsletter provides information on the Nutrient BMP Evaluation Project being conducted by Alberta Agriculture and Rural Development in partnership with local agricultural producers and funding partners. The purpose of this 5-year study is to evaluate the environmental and economic effectiveness of nutrient and livestock BMPs in the Indianfarm Creek and Whelp Creek watersheds as well as at two irrigated fields near Picture Butte.

What are Beneficial Management Practices (BMPs)?

Practical approaches to conserving our natural resources without sacrificing productivity.

Local Information Meetings

Over 20 producers and landowners attended the information meeting in February in Pincher Creek to learn about the project and discuss water quality and nutrient management issues. Presentations focused on agri-environmental issues from global to local perspectives. An update on the Water For Life - Alberta Water Council was also presented along with several examples of grass roots initiatives of local watershed groups. Larry Nolan of Nolan Cattle Company, Picture Butte, provided a producer perspective on being proactive with environmental issues and why he decided to participate in the BMP project.

The meeting participants were interested in the water quality results and in finding cost effective solutions to issues while maintaining water quality for the future. Questions were

raised and ideas put forward about sources of phosphorus, algae problems in water, manure application equipment and urban waste/storm water systems. Over half of the participants indicated on the evaluation forms that they were interested in the idea of forming a watershed group to discuss and address local issues.

“identify practical solutions for water quality sustainability.”

At the meeting people commented that they liked the fact that this project is about finding solutions that work for the landowners, not solutions that are only good for the government. Others said it may help to “identify practical solutions for water quality sustainability.”

You're Invited!

Indianfarm Creek Watershed Meeting
June 11, 2008 at 9:30am
Pincher Creek, Heritage Inn (Boardroom A)
919 Waterton Ave.

Open to all producers in the watershed. Please join us to discuss your thoughts on the future of your watershed and forming a watershed group. Refreshments will be served.

For more information contact Janelle Villeneuve, 403-381-5867

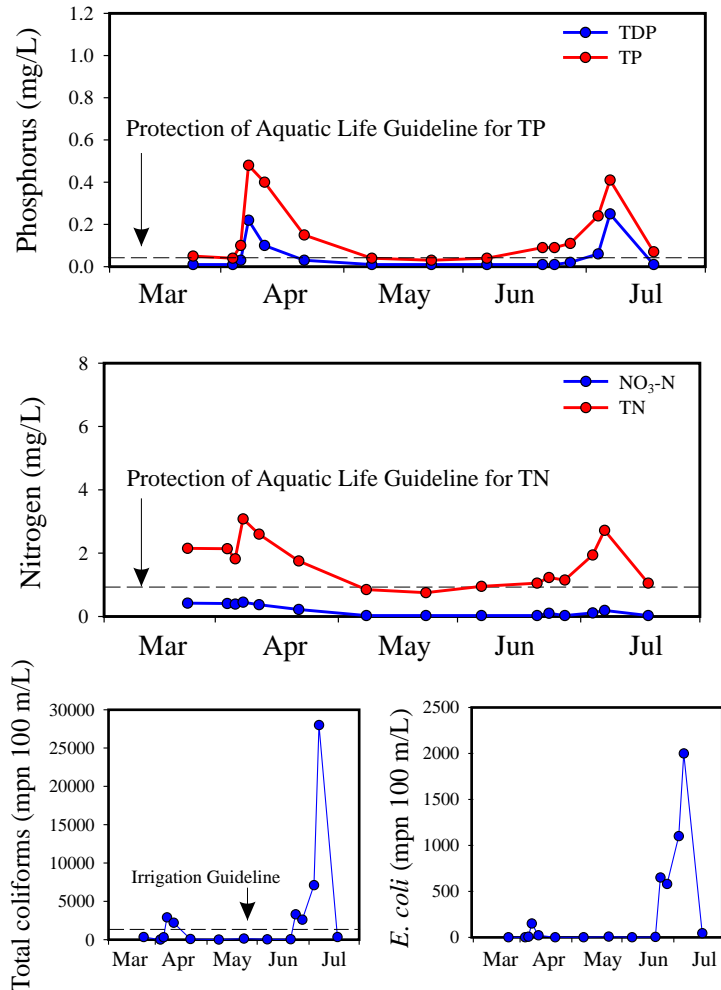
Indianfarm Creek Water Quality

Water quality in Indianfarm Creek in 2007 generally exceeded water quality guidelines, despite the very dry conditions during May and June. Most total phosphorus (TP) and total nitrogen (TN) values in Indianfarm Creek were above the guidelines for the protection of aquatic life, which are 0.05 mg/L for TP and 1.0 mg/L for TN. The water at the downstream (outlet) end had an average TP concentration of 0.16 mg/L. Total dissolved phosphorus (TDP) was much less than TP, indicating that the majority of the TP was in the particulate form (phosphorus was attached to soil particles in the water). This may suggest that significant stream-bed erosion is occurring. The outlet had an average TN concentration of 1.68 mg/L. Nitrate nitrogen ($\text{NO}_3\text{-N}$) was much lower than TN. Concentrations of TP and TN at the outlet were higher during the few rainfall runoff events compared to base flow levels in the creek when no runoff occurred.

Bacteria concentrations in the water were measured by testing for total coliforms (TC) and *Escherichia coli* (*E. coli*). These bacteria are indicators of possible fecal contamination and may indicate the presence of pathogens or disease-causing organisms in the water. In 2007, total coliform concentrations generally exceeded the water quality guideline for irrigation (1000 *mpn 100 m/L). Average total coliforms were 3161 mpn 100 m/L and average *E. coli* concentrations were 305 mpn 100 m/L at the downstream outlet.

*Note: **mpn** is the **most probable number** and is the unit associated with a standard laboratory method to determine bacteria concentrations.

The first year of monitoring data suggests that agricultural fields contribute nitrogen, phosphorus and bacteria to the creek. However, not enough flow occurred to make conclusions for all of the monitoring sites. The water quality results in Indianfarm Creek are typical of other high agricultural intensity watersheds, where studies have shown that water quality is compliant with the guidelines less than 20% of the time.

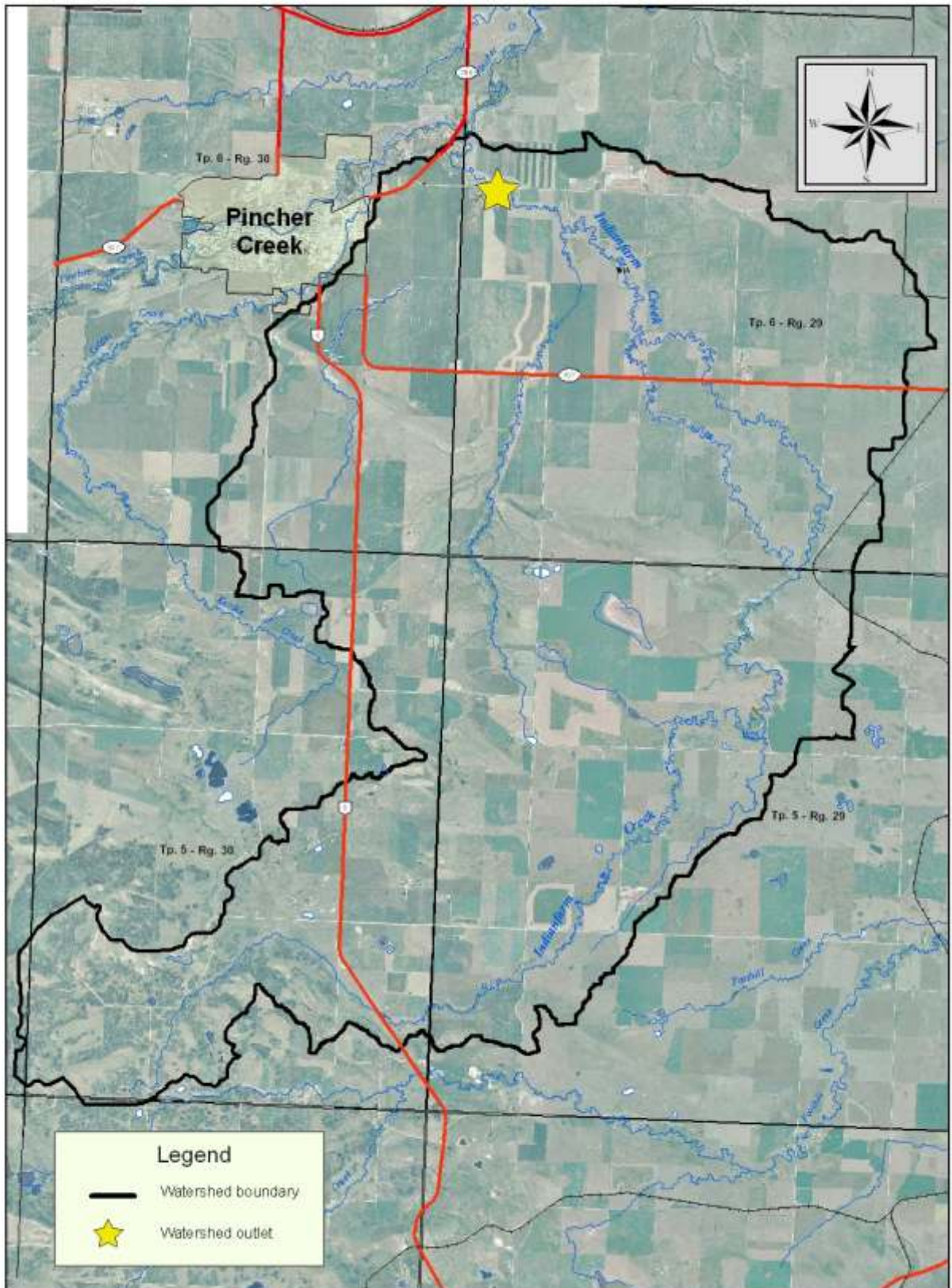


What are guidelines used for?

Aquatic Life Guidelines. These are used as a reference to help to protect plants and animals that live in our lakes and rivers by setting acceptable levels for substances that affect water quality. The guidelines are based on the most sensitive plants and animals found in Alberta waters.

Irrigation Water Quality Guidelines. These are used as a guide for water being applied on vegetable and fruit crops, which are for direct consumption such as lettuce or strawberries.

Indianfarm Creek Watershed



Watersheds

Everyone lives in a watershed! A watershed is an area of land including the hills, flat areas and low spots that drains into creeks, lakes and wetlands. Indianfarm Creek drains into the Pincher Creek, which is part of the Oldman River Basin.

Future Field Work

Water monitoring will continue in 2008. There are 21 water monitoring stations in Indianfarm Creek Watershed. Along with water quality, water flow will be measured. These data will be used to assess how water quality will change with the implementation of beneficial management practices. Soil, crop, and manure samples will be collected and the results will be related to runoff water quality and used for nutrient management planning. Riparian and rangeland assessments also will be carried out in the watersheds this year as well.



Collecting spring runoff samples



Water monitoring station



Downloading weather station data

Other Upcoming Events:

Environment Week is June 1-7

This year's theme is **Water: Connect, Protect, Conserve**. Environment Week celebrates the work accomplished by people like you to protect and sustain our natural resources. It's a chance for everyone to become better-informed stewards and to adopt more responsible actions. To learn more visit www.environment.alberta.ca and click on the *Education* tab.

June 5 is AWQA Day

Alberta Water Quality Awareness (AWQA) Day is a program focused on increasing people's awareness and understanding of water quality and watershed health, through hands-on water quality testing. For more information go to www.awqa.ca or call 780-422-4385.

BMP Evaluation Project, contact:
Phil Boehme at 403-782-8035

The progress report for the project will be available on-line at: www.agric.gov.ab.ca
(Type the project title in the 'Search' option)

Many thanks to the participating producers for your interest and cooperation and to the project partners for the technical and financial support, including:

