

# PRAIRIE WATER CARE PROGRAM

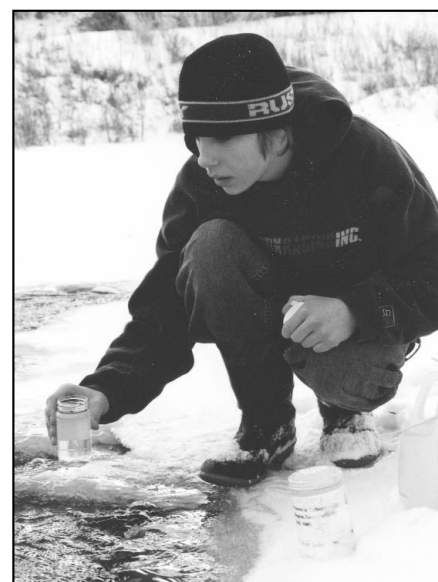


Grade 11 Biology students test water samples from the creek for various water quality parameters.

One of Mr. Radchenko's students takes a water sample from the creek.

## SWIFT CURRENT

- WHO:** Myles Radchenko (Swift Current Comprehensive High School biology teacher) and his Grade 11 biology classes
- WHERE:** 2 locations in the Swift Current area
- WHEN:** Began sampling in July 1998
- WHY:** Mr. Radchenko wanted his students to learn about water testing and to teach his students that they can play a role in creek stewardship
- WHAT:** Mr. Radchenko collects the creek water samples and brings them to class for the students to test. Mr. Radchenko also analyzes stream bank health at the water sampling sites
- RESULTS:** Especially during the summer months at the sampling location downstream of Swift Current, the group consistently finds higher levels of fecal coliform bacteria during the summer months compared to the upstream water sampling site



## LAC PELLETIER

- WHO:** Lac Pelletier Cabin Owners Group (Audrey and Mel Davis, Alice and Wayne Dawson, Gloria and Wally Dyck, Glenn Bratvold, Kay Froese, Glenda Kehoe, Eleanor McDowell, Dianne Nerada, and Joan Williamson)
- WHERE:** 4 locations at Lac Pelletier
- WHEN:** Began sampling in June 2001
- WHY:** The Cabin Owners wanted to understand the importance of a healthy water supply and to ensure the lake water is safe for recreational use
- WHAT:** The group joins once a month during the spring, summer and fall to conduct water tests, to determine the diversity of bugs in the water, and to analyze the health of the stream bank
- RESULTS:** At all 4 sampling locations, the group consistently found high levels of total dissolved solids, phosphates, fecal coliform and turbidity in their August samples

One of the volunteers performs the dissolved oxygen test on the lake water.



## PRAIRIE WATER CARE

### What do PWC Groups Measure?

- dissolved oxygen
- water temperature
- pH
- ammonia/nitrates
- electrical conductivity
- turbidity
- fecal coliform bacteria
- phosphates

The Prairie Water Care (PWC) program is a hands-on program for volunteers who are interested in learning about water quality issues. The PWC program has four components: i) water monitoring, ii) macro-invertebrate ("bug") identification, iii) riparian health assessment and iv) a specific conservation activity in each area. The objective of the program is for volunteer groups to understand the importance of each of these aspects to the health of the water and how they are inter-related in purpose.

Each volunteer group receives technical assistance and training from PWC staff of the Saskatchewan Watershed Authority. If you are interested in learning more about the program, please contact Jody Oliver at 306-535-9760.

Information Sources: PWC program summary: by Joan Williamson. Volunteer Group Summaries compiled by: Jenna King. Each volunteer group provided information for this newsletter.

### CREDITS AND ACKNOWLEDGMENTS

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# Swift Current Creek Watershed Stewards

# Know Your Watershed

Volume 1 #3

Know Your Watershed

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## Drinking Water Management and Saskatchewan Environment

Excerpts of an article written by: Sam Ferris, Saskatchewan Environment

In the aftermath of events surrounding Walkerton, Ontario and North Battleford, Saskatchewan, governments across Canada have moved to strengthen requirements and refocus the roles of regulatory agencies that manage drinking water and related raw water sources. In Saskatchewan, The Water Pollution Control and Waterworks Regulations (1984) were repealed and the new Water Regulations, 2002 were brought into force in December 2002. Some highlights of the Water Regulations, 2002 include:

- mandatory and immediate standards for bacteriological drinking water quality of no detectable total coliforms or fecal coliforms per 100 millilitre (mL) sample and no growth of background bacteria exceeding 200 organisms per 100 mL;
- immediate reporting of waterworks and wastewater works upsets which may impact drinking water quality or the environment;
- immediate mandatory compliance with a strengthened set of water testing and follow-up requirements;
- water quality testing after alteration, extension or replacement of waterworks or components of a system;
- the need to provide an annual notice to consumers served by a waterworks with notification of the quality of water produced by

the system and permittee's compliance with Saskatchewan Environment's sample submission requirements;

- the need to ensure that effective July 15, 2005 the operation, repair and maintenance of a waterworks or wastewater works is under the direction of an operator who is certified in accordance with the classification of the works;

Saskatchewan Environment has also undertaken complementary non-regulatory activities that are aimed at the provision of safer drinking water in the future. Some of these activities include: increased inspection of waterworks and sewage works; preparation series of drinking water related guidelines and standards; development of a publicly accessible internet web-site providing up to date drinking water quality information; and other activities.

Please see SE's full article on this topic on the Swift Current Creek Watershed Stewards website at <http://www.t2.net/sccws>. Additional information on SE's drinking water requirements, standards and guidelines may be obtained by contacting local Environmental Project Officers, the Regina office or may be found on the department's web site at <http://www.se.gov.sk.ca>. A copy of EMPA and The Water Regulations, 2002 may be found at <http://www.qp.gov.sk.ca>.

## How is water quality measured?

Water quality is measured by taking a water sample and testing the sample for levels of various chemical and biological properties. For example, water samples may be tested for nitrates, dissolved oxygen and coliform bacteria. The results of the tests are then assessed using a specific guideline for the intended use of the water. For example, drinking water from a tap would be assessed using the drinking water guidelines and irrigation water would be assessed using irrigation guidelines. Thus, the results of water quality testing depend on what you intend to do with the water.



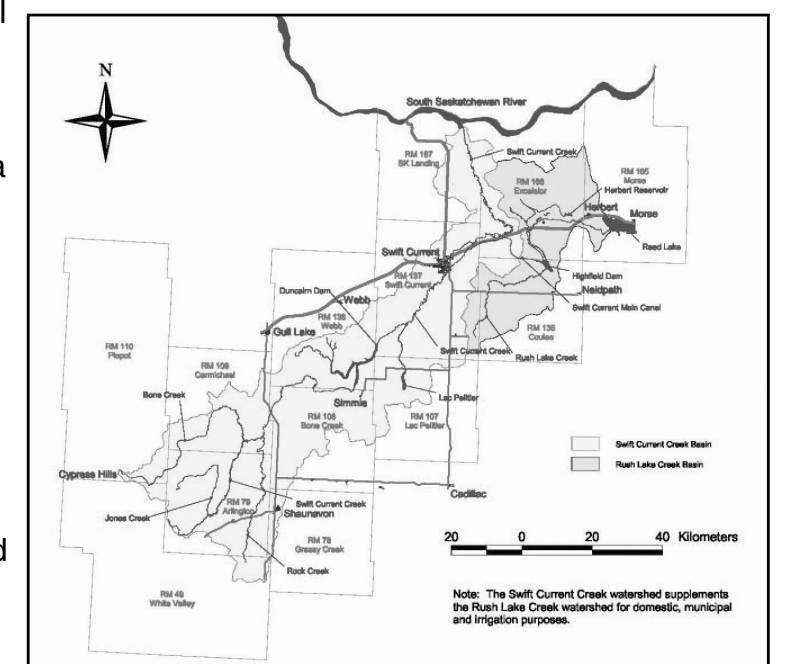
A water quality testing bench at the City of Swift Current Water Treatment Plant.

## Thinking Like a Watershed

Adapted from: Fitch, L. and N. Ambrose. 2003. *Riparian Areas A User's Guide to Health. Lethbridge, Alberta. Cows and Fish Program.*

We can do many things on our own property to fix an ailing stream bank or piece of lakeshore. It's important we do what we can as individuals but maintaining or restoring a watershed has to be an integrated collection of individual efforts. Our individual efforts can sometime be less than effective, especially in the face of cumulative effects of all upstream activities. Riparian health on your reach of the watershed is affected by what your neighbours do, and what activities occur, sometimes far from your place in the watershed. Watershed level work seems overwhelming because of the scale. However, there are ways to make watershed scale work manageable. The first step is to recognize that we can manage cooperatively what we can't individually.

That is an old, powerful concept called "community". All of us belong to some community, usually at a municipal level. At this level, every community boundary includes a larger portion of a watershed than that of an individual property owner. Add two or three communities together and most of a watershed will be found in those boundaries.







## URBAN

(Information Source: Minutes of the Environmental Advisory Board (2001- 2003), City of Swift Current.)

The City, with the assistance of the Environmental Advisory Board (EAB), has undertaken several initiatives that promote good water quality. Some of these initiatives relate to water conservation and some will reduce the potential for pollutants to enter the water cycle over the long term. In addition to programs available to residents, the EAB is hosting "A Town and Country Enviroforum" on May 21 and 22 at the Civic Centre. The Enviroforum will educate and encourage residents to be concerned about environmental protection, waste reduction and conservation.

### Water Conservation Initiatives:

- o Subsidizing the cost of household water conservation kits to city residents. The kits are available at City Hall at a cost of \$5 and include 1 adjustable toilet tank flapper, two low flow kitchen and bathroom sink aerators, 1 low flow shower head, plus some other goodies
- o Hosting two Xeriscaping Workshops with Sara Williams. Teaching residents to create beautiful landscapes using less water than the average yard.

### Waste Reduction Initiatives:

- o The compost program started in April 2001. In the first year, 208 tonnes of compostable material was collected and 258 tonnes were collected in 2002.
- o The four recycling depots now include very popular plastic recycling bins. The bins are emptied twice per week!
- o Some Staggering recycling statistics for Swift Current (2002):
 

Recycled Milk Jugs/ Cartons	5 metric tonnes
Shredded Paper	50 metric tonnes
Household plastics	900 lbs
Cardboard Products	66 metric tonnes
EcoCenter Oil	13,450 liters
EcoCenter Oil Filters	20 - 45 gallon drums
EcoCenter Oil Containers	1770 kg

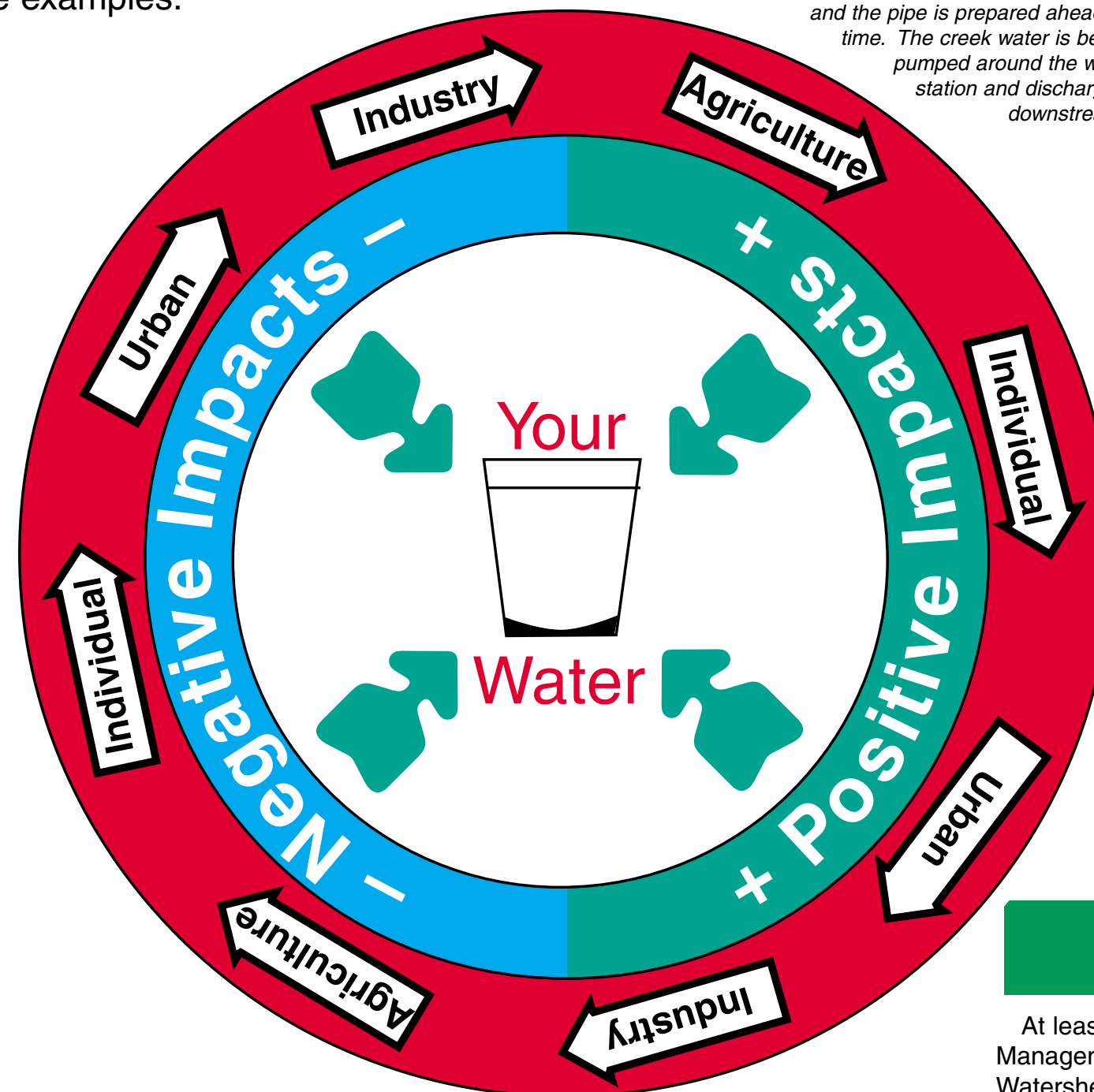
## RECYCLING OIL, OIL FILTERS AND OIL BOTTLES

Information Source:  
<http://www.usedoilrecycling.com>

One litre of used oil can contaminate up to one million litres of fresh water. Used oil, oil filters, and oil containers can all be recycled. Used oil can be recycled for the production of asphalt for roads and highways. Oil filters are shredded, heated to a molten state and re-used for other products such as rebar, nails and wire. Empty plastic oil bottles can be recycled into new containers, plastic flowerpots, plastic pipe, guardrails, fence posts and plastic patio furniture. In Swift Current used oil, oil filters, and oil containers are recycled at Apex Tire & Auto, Canadian Tire, Cypress Motors, Kwik Lube 'n' Exhaust, Milbert's Service Ltd., and Sask. Abilities Council.

# Swift Current Creek Watershed

Throughout the Swift Current Creek Watershed, people in individual homes, towns, cities, farms and other businesses affect our water quality on a daily basis just by living. Some of our actions will promote good water quality by reducing the potential for a substance to become a pollutant and some of our actions will decrease overall water quality by increasing the potential for a substance to become a pollutant. We all have a role in promoting good water quality; here are some examples:



A work in progress. To reduce time in-stream, a temporary bridge was placed across the creek and the pipe is prepared ahead of time. The creek water is being pumped around the work station and discharged downstream.

## INDUSTRY

Article submitted by: Rob Owens, Foothills Pipe Lines Ltd.

Foothills Pipe Lines Ltd. operates a 42 inch diameter natural gas pipeline that crosses Swift Current, Bone, Jones and Rock Creeks in southwestern Saskatchewan. The pipeline was constructed in 1982 and carries Canadian natural gas from Alberta to the United States.

Building a large pipeline through streams in a way that protects the stream bed and banks and preserves water quality requires careful planning and special construction techniques. Foothills' recent pipeline repair work involving Bone Creek is a good example of how that is done. Before beginning work at Bone Creek in the winter of 1996 current stream information was collected and used to develop a construction plan. The plan was provided to fisheries and watershed managers at Saskatchewan Environment to review and approve.

To avoid disturbance to the stream bed and bank by heavy equipment crossing the stream a temporary bridge was installed. To reduce downstream siltation due to digging the pipe trench and burying the pipe a "dam and pump" technique was used. Large steel plates were driven into place across the width of the stream at both and upstream and downstream locations. These plates essentially isolated the 20 metre wide area of stream bed and the bank that was directly involved in the digging. While the panels were in place, water in the stream was pumped around the work site and discharged in a clean condition downstream. All pipeline work in the stream was completed between the two plates. When the pipe placement was complete and the stream bed had been returned to its original configuration, the steel plates were removed. The amount of sediment entering the stream during and after the work was monitored and a report was prepared for Saskatchewan Environment. After construction the site was cleaned up. Rocks were placed along the stream banks to prevent erosion and the banks and adjacent pasture areas were revegetated. The photos show Bone Creek during and two years after the pipeline repair.



The pipeline crossing the creek after site cleanup in early spring of 1996.

## AGRICULTURE

At least 23 landowners along the Swift Current Creek system have undertaken Riparian Area Management Demonstration Projects under the Prairie Stewardship Program offered by the Saskatchewan Watershed Authority. Some of the ideas used in the projects include planting buffer strips of vegetation along the creek, off-creek water development, pasture seeding, fencing, and corral relocation.



## WHY SHOULD I RECYCLE?

Recycling, which includes composting, turns materials that would otherwise become waste into valuable resources. Collecting recyclable materials reduces the need for landfilling and incineration, saves energy and prevents pollution caused by the extraction and processing of virgin materials and the manufacture of products using virgin materials, conserves natural resources such as timber, water, and minerals and helps sustain the environment for future generations.

## WATER QUALITY AND POLLUTANTS

To pollute or contaminate a water course is to make the water unfit or harmful to living things. Some examples of potential pollutants are: sediment, nutrients and pesticides, organic matter, heavy metals, salts and pathogens. All of these substances occur naturally, and are not always considered pollutants. However, when the amount of any particular substance is so great that it alters the chemistry or biology of water, that substance can be considered a pollutant.

## WHY KEEP A BUFFER ZONE?

Buffer zones improve the health of riparian areas along the creek that serve many functions: trapping and storing sediment, and filtering and buffering water from organic matter, chemicals, and other potential pollutants just to name a few. The benefits of maintaining a healthy riparian zone are amazing: promoting clean water, balancing a water supply, providing healthy plant life, improving soil conditions, increasing fish and wildlife habitat and just looking good!

(Source: Saskatchewan Watershed Authority and Riparian Areas: A Users's Guide to Health).