

Oldman River Basin Water Quality Initiative ... Partnering For Our Future

1999/2000 Annual Report

You're Invited!

Oldman River Basin Water Quality Initiative 2001 Annual Workshop

The Oldman River Basin Water Quality Initiative invites you to its annual workshop **February 13, 2001**. This Workshop is designed to inform the public about activities of the Initiative, discuss current water quality status and supply individuals with techniques to preserve water quality. **Cost of the Workshop is \$30** and includes lunch. The Workshop will be held at the **Lethbridge Lodge**.

**For more information please contact
Casey Arnestad at (403) 382-4239.
We look forward to seeing you there!**

Initiative Completes Second Year

In 1999/2000, the Oldman River Basin Water Quality Initiative (ORBWQI) held a very successful, well attended public workshop. The Initiative is now moving from the information gathering phase to a point where the data collected is beginning to be used in programs and publications.



The Beneficial Management Practices (BMP) Team conducted water quality and flow monitoring at 38 sites in the basin. A manure management survey was completed to complement this. For 2000/2001, an inventory of existing BMP demonstration projects is being compiled. An Urban BMP Team has also been formed to research and develop BMP's for urban areas within the basin.

The Water Quality Monitoring Team was also active in collecting and testing samples within the basin. Samples collected were tested for fecal coliform bacteria, nutrients, pH, dissolved oxygen and ions. The study found that water quality is good up stream and deteriorates incrementally downstream.

A detailed study of water quality within Six-Mile Coulee was also completed. Nineteen different pesticides were detected in water samples taken from this small drainage basin. Certain pesticides were found to exceed aquatic life guidelines on some occasions. The contaminants came from both urban and rural sources.

The Land Use Team completed several maps of the basin in 1999/2000. These maps are currently being placed on a CD-ROM and will be available for public purchase in early 2001.

Over the next year, the Water Quality and Land Use Teams will merge to interpret water test results with reference to land use inventories.

The Education and Awareness team spent the majority of 1999/2000 working to keep the Initiative partners and the public informed about projects and findings. One major project was the completion of the Initiative website that can be viewed at www.oldmanbasin.org. In 2000/2001, this team will become the Communications Team and will continue focusing on informing partners and the public.

The Business Team continues to monitor spending by the Initiative and direct group activities to ensure the group remains on track toward the common goal of maintaining and improving water quality in the Oldman River Basin.

What is a River Basin?

A river basin is an area of land in which water runs to a particular place. In the case of the Oldman River Basin this place is the Oldman River. Within the Oldman River Basin there are many rivers, streams and creeks which flow into the Oldman River. These bodies of water are called tributaries. A river basin may also be called a catchment or watershed.



The water that is above ground in areas such as ponds, lakes, rivers, dams, creeks and irrigation canals is called surface water. The water that is below the ground in the water table is called ground water.

The Oldman River Basin extends as far north as High River, east to Grassy Lake, west to Crowsnest Pass and dips south into Glacier International Peace Park.

While the Oldman River Basin Water Quality Initiative concentrates mainly on surface water, the Initiative is concerned with the quality of all water in the Oldman River Basin.

Map CD Nears Completion



The Land Use Team achieved several major goals in 1999/2000. Among these was completion of a land use inventory of the Oldman River Basin. This inventory includes intensive livestock operations (ILO's), crops, oil and gas sites, native vegetation, human population distribution, recreation sites and sub basins for the Oldman River. The crop inventory was gathered via satellite images while the other information came from existing data and fieldwork. From

this information a series of forty 1:50000 scale maps covering the entire Oldman River Basin was completed.

Another major activity of the land use group was to obtain information from the City of Lethbridge regarding the storm sewer network and the city's storm sewer holding areas. This information was combined with infrared aerial photographs to identify seepage points along the coulees.

The Land Use Team also developed a ground water vulnerability assessment map to provide municipal and county planners and other interested parties with another tool to use regarding development and water quality. Maps showing surface water vulnerability will be created during 2000/2001. A CD-ROM containing the maps developed by this team will be available for public purchase in the new year.

Water Quality Monitoring Continues

During the second year of operation of the Oldman River Basin Water Quality Initiative (ORBWQI), the Water Quality Monitoring Team continued to sample the Oldman River and its tributaries to provide an overview of conditions throughout the basin.

Samples collected were tested for fecal coliform bacteria, nutrients (nitrogen and phosphorous), pH, dissolved oxygen and ions (e.g.-calcium, sodium). At several selected sites information on pesticides was also obtained. The results of these monthly tests (April 1999-March 2000) are summarized in the map below.

Water quality in a number of tributaries is poorer than that found in the Oldman River itself. It is important to note that these tributaries have a much smaller volume of water than the river. Water quality in the Lethbridge Northern Irrigation District is generally good in comparison with many of the river and tributary sites. Throughout the basin the number and concentration of pesticides detected increased in an easterly direction.

Differences between test results for 1998/99 and 1999/2000 can be attributed to natural variation with one important exception. In 1999/2000 there was a significant improvement in water quality directly downstream of Lethbridge.

As a result of the spring 1999 upgrades to the City of Lethbridge wastewater treatment facility, levels of fecal coliform bacteria and nutrients have decreased at this site. In 1998/99 the fecal coliform guideline for recreational use of water was met only half the time downstream of the city. In 1999/2000 this guideline was met every time.

A second major undertaking of the Water Quality Monitoring Group was a detailed study of water quality within Six Mile Coulee.

Nineteen different pesticides were detected in water samples taken from various sites within this small drainage basin (compared to six types of pesticides found in river

Water Quality...

It's Everyone's

Responsibility! There are lots of things **YOU** can do to help preserve water quality. Here are a few...

- Water your lawn...not the sidewalk.
- Pick up pet waste.
- Use pesticides and herbicides sparingly and **ONLY** as directed.
- Don't leave unused chemicals sitting out.
- Be sure that septic systems are working properly.
- Repair vehicle fluid leaks right away.
- Limit livestock access to water sources. Consider "off-site" watering.
- Preserve treed areas by rivers.

For more information on water quality in the Oldman River Basin visit our website: <http://www.oldmanbasin.org/>

samples). Four of these compounds (2,4-D, dicamba, lindane, and chlorpyrifos) occasionally did not meet the aquatic life guidelines.

This study illustrated that high concentrations of pesticides and nutrients are related to run-off from storm events. The study also confirmed that these contaminants came from both urban and rural sources. Contributions from urban sources will be better defined by samples collected in the summer of 2000 from the City of Lethbridge storm drain system.

Increasing Awareness of Beneficial Management Practices

The purpose of the Beneficial Management Practices (BMP's) Team of the Oldman River Basin Water Quality Initiative (ORBWQI) is to evaluate the effectiveness of BMP's within the Oldman River Basin and to reduce the impact of human activity on water quality.



The BMP Team conducted water quality and flow monitoring at 38 sites in the Battersea Drain and the Little Bow River watersheds from mid-April to mid-October, 1999. Monitoring results indicated that the total phosphorus concentrations met guidelines in less than half of the samples from the Battersea Drain and in just over half of the samples from the Lower Little Bow Basin. In the Battersea Drain, 67% of samples taken met recreation guidelines for fecal coliform

bacteria, while 75% of samples taken from the Lower Little Bow Basin met these guidelines.

Joanne Little, a water quality biologist with Agriculture and Agri-Food Canada, says, "By far the highest concentrations of nutrients were found following a major precipitation event in June. In order to preserve water quality, we need to manage the land to minimize surface water runoff."

The Cows and Fish program began awareness and education activities by contacting local producers along the Lower Little Bow River to identify community water quality issues and to determine potential interest in riparian health assessment.

The BMP Team of the ORBWQI also completed a manure management survey of intensive livestock operations in the Battersea Drain. Survey results from responding producers indicated that 95% of producers incorporated manure within 48 hours of distribution on cropland and that nutrient management practices (balancing nutrient input with crop needs) were being used by about half the producers.

As Joanne Little says, "Although this demonstrates that most producers are implementing BMP's, there is always room for improvement". Applied research has begun at the

Lethbridge Research Centre to evaluate the effectiveness of manure incorporation methods in minimizing nutrient and bacteria levels in run-off.

For 2000/2001, the BMP team will continue water quality and flow monitoring in priority watersheds, with an emphasis on sampling during rainfall and runoff events. An inventory of existing BMP demonstration projects is currently being compiled. The BMP Team is also compiling and summarizing research findings on BMP's. This information will be made available to producers. Continued work with industry, landowners, local municipalities, and Cows and Fish Program staff to develop BMP's and encourage the establishment BMP demonstration projects are other ongoing activities for the BMP Team.

Communicating With Our Partners

The Education and Awareness (E&A) Team of the Oldman River Basin Water Quality Initiative (ORBWQI) helped keep Initiative Partners and the general public informed about the activities of the Initiative.



The E&A Team was instrumental in the planning of the 1999/2000 Annual Meeting. The purpose of this meeting was to report to the partners and public about activities of the last year and to provide current information about the Initiative.

Over the course of 1999/2000, the E&A Team distributed two newsletters to ORBWQI Partners. These newsletters spoke of the progress made by the groups to date and included informative articles about Initiative activities within the basin.

Two information brochures were also prepared and distributed. One of these brochures focused on urban water quality issues, while the other focused on rural water quality issues. Each of these brochures contained tips on ways the general public can help maintain water quality.

The E&A Group led two media tours in 1999/2000. The first tour was of the Lethbridge Waste Water Treatment Plant and the second was of the Takeda Farm in Coaldale. Both tours highlighted beneficial management practices to local media.

A series of newspaper articles were printed in the Lethbridge Herald to provide information on the Initiative's activities. A second series of articles was also completed that focused on agricultural producers who are making changes in their farming and livestock operations to enhance water quality.

The E&A Group also initiated the creation of a website containing information about the Initiative, water quality and useful links. The website can be viewed at <http://www.oldmanbasin.org/>

Initiative Reaches Turning Point

The Business Team of the Oldman River Basin Water Quality Initiative (ORBWQI) managed \$799,675 in contributions for 1999/2000. Of this \$121,335 were cash donations while \$678,289 were in-kind services, both were received from Partner agencies and the Federal and Provincial Governments.

During the second year of operation the ORBWQI gained a clearer picture of issues within the basin that need to be addressed. As the Initiative moves forward with a better view of water quality issues, it is beginning to adjust in response.



Currently, the Initiative is at a turning point between collecting baseline information and refocusing its attention on stronger communication, beneficial management practice implementation and evaluation of this implementation. The business group deals with the day to day operational issues and attempts to help guide the Initiative to a useful outcome.

The Business Team is also responsible for addressing the issues regarding water quality that may cause tension between basin residents. This means the Business Team must consider differing opinions on the direction of the project and attempt to address these views.

The February 2000 workshop received high ratings from participants and feedback has assisted the Business Team in steering the Initiative to address the concerns and meet the needs of residents of the Basin and stakeholders in the Initiative.

The 2000/2001 Workshop will be held on February 13, 2001 at the Lethbridge Lodge Hotel. For more information please see the advertisement on page one.

Contributors		
	Cash	In-Kind
Alberta Environment		\$281,889
Alberta Agriculture Food and Rural Devel.		\$223,510
Alberta Health		\$36,840
Alberta Cattle Feeders Association		\$14,000
Chinook Health Region		\$42,450
City of Lethbridge	\$ 20,000	\$2,000
County of Lethbridge	\$1000	\$1,800
Intensive Livestock Working Group		\$11,000
Prairie Farm Rehabilitation Admin.	\$ 85,000	\$10,300
Southern Alberta Environmental Group	\$100	\$2,500
University of Lethbridge		\$2,000
Agriculture Canada		\$50,000
Town of Coaldale	\$5,000	
Town of Coalhurst	\$367	
Lethbridge Northern Irrigation District	\$8,000	
Town of Picture Butte	\$1,669	
Agricore	\$200	
Totals	\$121,336	\$678,289
Combined Total	\$799,675	

Resources Used By Teams (cash and in-kind combined)	
Business	\$ 42,000
Beneficial Management Practices	\$288,100
Education and Awareness	\$ 52,919
Water Quality Monitoring	\$319,080
Land Use	\$ 90,371
Total	\$792,470

- Partners**
- Agriculture and Agri-food Canada, Research Branch
 - Prairie Farm Rehabilitation Administration (PFRA)
 - Alberta Agriculture, Food and Rural Development
 - Alberta Cattle Commission
 - Alberta Cattle Feeders Association
 - Alberta Environment
 - Alberta Health
 - Alberta Irrigation Projects Association
 - Alberta Livestock Council
 - Alberta Pork Producers
 - Canbra Foods
 - Chinook Health Region
 - City of Lethbridge
 - County of Lethbridge
 - Health Canada
 - Lethbridge Chamber of Commerce
 - Lethbridge Northern Irrigation District
 - Oldman River Intermunicipal Service Agency
 - Southern Alberta Environmental Group
 - Town of Picture Butte
 - Town of Coaldale
 - Town of Coalhurst
 - University of Lethbridge

Call For Nominations

For 2000/2001 the Oldman River Basin Water Quality Initiative will be implementing an awards program.

The "Partnering For Our Future" award will be given to a basin resident who makes an outstanding effort to help preserve water quality within the Oldman River Basin.

There are two categories for this award. The first award is to recognize a rural resident of the basin who implements beneficial management practices designed to minimize the impact of rural activities while the second award will distinguish an urban resident who uses practices intended to reduce the impact of urban activities on water quality.

A committee made up of Initiative members will select the recipient of each award from public nominations. Nominations must include the information from the form below or forms can be picked up from a Partner Agency. A short written explanation (maximum 500 words) of the nominee's activities that help to preserve water quality must accompany the nomination.

Nominations may be faxed attention of Casey Arnestad to (403) 382-4428 or mailed to the Oldman River Basin Water Quality Initiative, Alberta Environment c/o Casey Arnestad, 2nd Floor 200 5th Ave S. Lethbridge, AB, T1J 4L1.

Nominations must be received by January 10, 2001. Winners will be presented with their award at the 2001 Annual Workshop, February 13, 2001.

Contact Us

If you have any questions regarding the Oldman Water Quality Initiative or would like to participate, please contact:

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