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

August 1999 Newsletter - Issue #3

The Oldman River Basin Water Quality Initiative released a four-component, five-year Action Plan in March of 1998. In January 1999, the second annual water quality workshop was held to summarize the year's activities. Since then, work has continued. Highlights since January's workshop are listed below.

- **Land Use Assessment**
  Oriano Castelli/Livio Fent, Chairs
  - Twenty-nine of 38 1:50,000 maps have been produced with hydrography, livestock feeding operations, waste sites, water wells and water sampling sites superimposed on satellite imagery.
  - An approach to vegetation classification in the non-forested area has been determined.
  - Various methodologies for spatially classifying surface water sensitivity are being assessed.
- **Water Quality Monitoring**
  Karen Saffran, Chair
  - All data collected, verified and graphed for the April 1998 - March 1999 period.
  - Flow data still to be compiled for 1998/99 so that annual loads can be calculated.
- **Beneficial Management Practices**
  Rod Bennett, Chair
  - Matching contributions from other organizations has multiplied threefold the dollars available for BMP work.
  - Interviewing has commenced to hire a water quality specialist to coordinate BMP applications with cooperating producers in the pilot reaches. This position will also have technical support.
  - Various manure studies (phosphorus loadings and applications) are underway.
- **Education and Awareness**
  Ron Axelson, Chair
  - The group would like to expand the scope of their activities to include programming for general public and target groups if additional resources can be found.
  - The 1998/99 Annual Report was prepared and placed in local weekly and daily newspapers.

Financial Report 1998/99

The Initiative is mainly funded (in cash and in-kind services) through Alberta Environment, Alberta Agriculture, Food and Rural Development, Alberta Health and Wellness, Chinook Health Region, and Agri-Food Canada Research Branch, Prairie Farm Rehabilitation Administration (PFRA). Donations from municipalities and organizations in the basin have also contributed to funding the five-year plan. Year one activities amount to nearly $625,000 in cash expenditures and in-kind services.

	Cash	In-kind	Total
Education and Awareness	4,812	22,256	27,068
Beneficial Management Practices		131,871	131,871
Land Use Assessment		144,000	144,000
Monitoring	26,813	268,355	295,168
Business and Working		19,725	19,725
TOTALS	31,625	586,207	617,832

Alberta Ambient Surface Water Quality Interim Guidelines
Background To Water Quality Monitoring

The Alberta Ambient Surface Water Quality Interim Guidelines are "general" guidelines based on the most sensitive water use that a particular substance can affect. For example the guideline for total phosphorus is 0.05 mg/l. Exceeding this guideline can mean that excessive aquatic plant and algae growth may occur, which is undesirable from an aesthetic viewpoint (recreation) and may lead to low oxygen conditions due to the decay of organic matter. The Alberta guideline for total nitrogen is 1.0mg/l. Nitrogen is also a nutrient that can contribute to plant growth, and certain nitrogen compounds (e.g. nitrate, ammonia) can be toxic to humans, animals and aquatic life. Further information on these guidelines can be obtained at:
www.gov.ab.ca/env/dept/facts/watqualt.html

The Canadian Water Quality Guidelines are use-specific, pertaining to recreation, irrigation, livestock watering, freshwater aquatic life, etc. There are no Canadian Guidelines for total phosphorus or total nitrogen, but there are for bacteria. For irrigation use a value of 100 fecal coliform bacteria/100 ml is used. The guideline for recreation is 400/100 ml. Both of these guidelines take into consideration the risk of ingesting microbes and becoming ill (eating unwashed produce, getting a mouthful while swimming, etc.). It is not necessarily the fecal coliforms themselves that are the infective organisms; they merely indicate that other pathogens might be present due to fecal contamination. Further information on Canadian Guidelines are available from Health Canada at: www.hc-sc.gc.ca

Highlights From The LNID Study

Between May and September of 1998, an additional water quality monitoring program within the Lethbridge Northern Irrigation District north of Lethbridge was conducted. From these studies the following three key finding were noted:

1. The LNID portion of the study showed lower concentrations of nutrients, bacteria and parasites than in the river and tributaries.
2. The fecal coliform guidelines for recreational use were met in 98 percent of the samples and 94 percent of the samples met the irrigation guideline.
3. The Alberta guideline for phosphorus was met in 90 percent of the samples and for total nitrogen, it was met in 99 percent of the samples.

Initial Observations From Water Quality Testing - April To October 1998

1. Testing of 15 river and tributary sites between Fort Macleod and Purple Springs showed 80 percent of fecal coliform bacteria samples complied with Canadian water quality guidelines for recreation use, and 50 percent were within the irrigation guideline.
2. Fifty percent of the samples complied with the Alberta guideline for phosphorus, while 90 percent complied with the nitrogen guidelines.
3. The parasite Giardia was detected more frequently than Cryptosporidium. Preliminary results suggest that both may be occurring more frequently upstream (e.g. Fort Macleod area) than in downstream areas.
4. Pesticides were detected are least once in 97 percent of all samples. Concentrations increased in a downstream direction. Most guidelines were met, but the herbicides MCPA and dicamba often did not comply with irrigation guidelines.
5. The City of Lethbridge wastewater treatment facility was the largest point source of bacteria and nutrients to the Oldman River. The anticipated positive effect of the new wastewater facility will be monitored in 1999.
6. Six-Mile Coulee had the highest concentrations of nitrogen, phosphorus and pesticides. Nitrogen and phosphorus occasionally exceeded the Alberta guidelines. The herbicides dicamba and MCPA also were occasionally above irrigation guidelines. The insecticide lindane was above the Canadian guideline for the protection of aquatic life on one occasion. The insecticide diazanon exceeded the Canadian drinking water guideline once.

New Co-Chair With Land Use Assessment Team

Livio Fent, who had headed up the Land Use Assessment team since 1998, has taken a new position with Alberta Environment in Edmonton and will be eventually passing full responsibility of the Land Use Assessment team over to the new Resource Information Generalist with Alberta Environment in Lethbridge. In the interim, Oriano Castelli will be managing the work being accomplished by this team. Oriano has been employed with Alberta Environment for the past 3 years after 11 years with Alberta Agriculture Food and Rural Development - Public Lands. Oriano can be reached at (403) 381-5624.

Partners For Our Future...

- Chinook Health Region
- Alberta Agriculture, Food and Rural Development
- Alberta Environment
- Alberta Cattle Feeders' Association
- Agriculture & Agri-Food Canada
- Alberta Cattle Commission
- Alberta Health and Wellness
- Alberta Irrigation Projects Association
- Alberta Pork Producers
- Canbra Foods
- Intensive Livestock Working Group
- City of Lethbridge
- County of Lethbridge
- Health Canada
- Lethbridge Chamber of Commerce
- Lethbridge Northern Irrigation District
- Oldman River Intermunicipal Service Agency
- P.F.R.A.
- Southern Alberta Environmental Group
- Town of Picture Butte
- University of Lethbridge