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## Keeping an Eye on the Bow River Basin

By Heinz Unger

As AWA's representative on the Bow River Basin Council (BRBC), I participate in their quarterly meetings, which are very important and useful for information sharing and networking with the many different stakeholder representatives from the basin. The BRBC is a good forum for raising issues of concern with regard to the Bow River, such as last March when I gave a presentation on the environmental and water quality threats from unregulated OHV activities to the Ghost-Waiparous area.

The most recent BRBC project, in which I participated as co-project manager, is an urban stormwater management website, which can be found at <http://www.urbanswm.ab.ca/>. There may be no apparent connection between urban stormwater and wilderness areas; however it was found that, although most human and industrial wastewater along the Bow River has been taken care of through sewage collection and treatment systems, urban stormwater continues to be a major source of water pollution. It carries not only sediment and silt, road salt, oil, and grease (from city roads), but also herbicides, pesticides, fertilizer (from lawn treatments), and bacteria (from pet waste). Most of it reaches the river in shock loadings after heavy storms or chinook snowmelts and can have serious impacts on the river ecology.

The new website is intended to assist the smaller municipalities, developers, consultants and contractors to identify and adopt best management practices—which are often simple to implement—to prevent or mitigate pollution from reaching the storm sewers and the river. The site also has education and communication resources and links to other relevant information sources and good practice examples. The website highlights an important conclusion and also a recommendation, namely that (urban) development is best planned and implemented on a watershed basis and that natural areas (wetlands, ponds, streams and floodplains) are best left undisturbed for better urban stormwater management.

In late 2002 the BRBC started work on a *Report on the State of the Bow River Basin* (more information on <http://www.brbc.ab.ca/issues2.asp>). It is intended to follow up on *Preserving Our Lifeline: A Report on the State of the Bow River* published in October 1994 by the Bow River Water Quality Council (the forerunner of the BRBC).

The 1994 report provided an overview of water quantity and water quality related issues on the main stem of the Bow River. The purpose of this initiative was to establish some “baseline” data and analysis to assess future changes in the river and determine whether or not those changes were positive or negative. The format of the report included an assessment of a number of significant water quality parameters on a reach-by-reach basis. The eight most prevalent types of water use were considered, ranging from contact recreation, irrigation, and drinking water supply to aesthetics and cool- and cold-water ecosystems.

The new report, which is scheduled to be available by the end of 2003 or early 2004, has been titled *Nurture, Renew, Protect: A Report on the State of the Bow River Basin*. While the approach to data gathering and analysis will be similar to the earlier report, there will be greater emphasis on the entire river basin and the potential impacts on water quantity and quality of activities and decisions (such as land use) anywhere in the basin. The importance of stewardship by all and better management will be stressed. The stated main objectives of the new report are the following:

- to improve the overall understanding of the Bow River Basin through the analysis of data, current information and trends;
- to facilitate decision-making for water issues in the Bow River Basin; and
- to engage the general public, stakeholders and resource managers in discussion, and through these discussions, make meaningful recommendations for future improvements.





In the future the report's data and analyses may help us, not only to identify wilderness areas and/or surface waters requiring action, but also to promote better protection for areas critical to water quality and quantity, especially the upper watersheds. I represent AWA (and all other environmental stakeholders) on the steering committee, which will direct the work of a group of consultants recently engaged by BRBC for the detailed preparation of the report. Any concerns or suggestions for data collection (as well as queries on any of the other BRBC activities referred to above) are welcome and should be directed to Heinz Unger at (403) 851 7632 or [heinz.unger@3web.net](mailto:heinz.unger@3web.net).

Better than contacting me, I would advise members and friends of AWA to get involved directly and thereby have their concerns heard and make their contributions in their local regions. Such involvement could be either in one of the larger river basin organizations, such as for the Oldman, Red Deer and North Saskatchewan River, or in one of the many local watershed groups that have sprung up all over the province (see <http://www.albertawatersheds.org/> for more details).

These smaller groups—supported by various levels of government, industry, and academe, as well as individuals—do very important work for the protection and improvement of local streams and creeks all over Alberta. Very often it is the farmers and ranchers who increasingly come forward as good stewards of the land and water and take the initiative to start and support a local watershed organization. There are great opportunities for all friends of the wilderness (and of good quality water) to get involved, speak up and work for water and the environment.

### **South Saskatchewan River Basin Water Management Plan Enters Phase II**

Since 2001 I have been a member of the Bow Basin Advisory Committee (BAC) to provide inputs to Alberta Environment for the Bow River portion of the preparation of the South Saskatchewan River Basin Water Management Plan. Preparations for the Red Deer, Oldman and South Saskatchewan Rivers are proceeding in parallel, and more information on all of these can be found at <http://www3.gov.ab.ca/env/water/regions/ssrb/>. Phase I was completed last year. It dealt with transfers of water allocations. Very few transactions have taken place since the plan was adopted, and it is too early to assess the merits and functioning of the transfer system.

Phase II, which started in late 2002, is of much greater interest and importance for our natural waterways since it deals with water management policy (i.e., flow allocations), and a strategy for the protection of the aquatic environment. The latter will involve the following:

- (i) a review of the current status of the environmental conditions of the rivers concerned, including the riparian vegetation;
- (ii) a scientific determination of technical instream flow needs for the full health and protection of the aquatic environment;
- (iii) recommendations for water conservation objectives (WCOs) as defined in the new provincial Water Act; and
- (iv) identification of land uses that could be affecting the aquatic environment and preparation of recommendations on how to deal with such land uses.

Instream flow needs are the first stage in this exercise, and a report on them is now being prepared by a government technical working group. The report will be subjected to an independent peer review. The instream flow needs are based on four essential components: water quality, fish habitat, riparian vegetation, and channel structure. Each of these elements requires successively higher flows. The last two are needed periodically for channel forming and flushing flows, with the latter also helping to improve water quality.





Water quality is determined based on dissolved oxygen, temperature and ammonia, and fish habitat is based on water depth, velocity, substrate, and cover per species and life stage. Although the instream flow needs may often be lower than the natural flows, they are an indicator showing that if instream flow needs are not met, there is an increasing risk to the natural environment.

The next, and most important, step of Phase II will be the establishment of WCOs, which, according to the Water Act, means “the amount and quality of water established by the (regional Alberta Environment) Director ... to be necessary for the (i) protection of a natural water body or its aquatic environment ..., (ii) protection of tourism, recreational, transportation or waste assimilation uses of water, or (iii) management of fish or wildlife, and may include water necessary for the rate of flow of water or water level requirements.”

Hidden amidst all the legal language is a real concern for the health of the aquatic environment, but it will be up to the “the Director” (Alberta Environment) to ensure that there’s enough water left in a given reach of the river for aquatic health. However, at times the WCOs may be a compromise between actual water use and the instream flow needs.

In such cases the established WCOs may become a target to be achieved over time. This is where the BAC and later the public come in, since all of us have to make sure that the rules and procedures for water management agreed to by the government will be adequate for the protection of the aquatic environment and that the government assigns a high priority to this objective, right below essential human uses.

There will be public consultations on the preparation of Phase II of the water management plan. The BAC has stressed the importance of wide advertising, provision of sufficient information and adequate time for responses from the public.

An important tool to be used for the eventual establishment of WCOs will be the development of a number of water management scenarios that have been agreed upon in a joint meeting of all South Saskatchewan River Basin advisory committees. These scenarios allow for the existing allocations, licences and commitments, and they then make reasonable assumptions (forecasts) about increased or decreased consumption, such as through 20 per cent conservation by all users.

Some scenarios also allow for providing the full or at least partial (water quality and fish habitat) instream flow needs as determined by the technical working group. There was discussion about including a climate change scenario, but eventually it was agreed that in case of a catastrophic drought, contingency plans rather than flow allocations would have to be used.

Although Alberta Environment had more ambitious plans for completing Phase II, they have realized the importance of doing it right through more in-depth research and background work and by getting advice and inputs from key stakeholders and the public. Completion of the final draft plan is now scheduled for early 2004.

Throughout my participation in the BAC activities, I have had the impression that there is serious intent by the government to protect and enhance the quality of our rivers, but we always have to be watchful—through our active participation in the process—that they do not compromise quality for the sake of political expediency.

