

Partners FOR the



Saskatchewan
River Basin

SASKATCHEWAN RIVER BASIN

Water

WATER FACTS ..

•
w Volumes of water are measured in cubic decameters (dam^3). A farm dugout is about 1 dam^3 .

w Water flow is measured in cubic meters per second (m^3/s). A flow of $1 \text{ m}^3/\text{s}$ would fill a dugout in about 15 minutes.

w Natural flows in prairie rivers

It's a hot day and that cold water sure tastes good. You wash the dishes then turn on the lawn sprinkler. In the nearby reservoir, kids splash while water-skiers swoop. Down-stream, pipes channel river water up to wheat fields, where big spray guns shoot water in a rainbowed circle. A nearby cattle owner pumps water for his thirsty calves. Treated waste water from a potato plant returns to the river, then flows through a turbine in a hydroelectric power station.

Everyone needs water. Ensuring that the right amount of water is available when and where it is needed is called water management. To manage water effectively, we need to measure the amount of water and predict flows and levels, especially if there might be droughts or floods. Water management often involves building dams with reservoirs which can store or release water as

required. Decisions need to be made about who gets how much water and when.

As there are more demands on our water resources, water management becomes more complex. Water use in the basin has been increasing at the rate of about

Water Management is one in a series of fact sheets. Fact sheets available on Water Quality and Hydroelectric Operations also discuss topics related

WATER USAGE IN THE SASKATCHEWAN RIVER BASIN

We often think of water in terms of how we use it. Some uses are called instream uses, because they take place with the water remaining in its natural setting, "in the stream". Examples are recreation, wildlife and ecosystem preservation. These are called non-consumptive uses. Withdrawal uses mean water is removed from the river or lake, for drinking water, irrigation, livestock or industry. Most of the

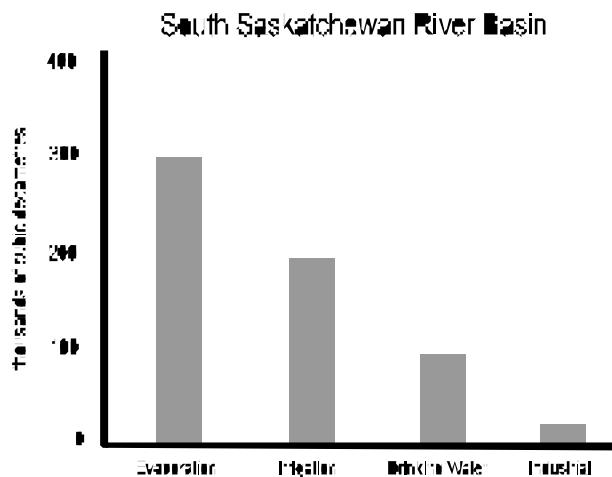
Consumptive Uses

- Drinking water
- Irrigation
- Livestock watering
- Industry

Non-consumptive Uses

- Hydroelectric generation
- Recreation
- Wildlife
- Ecosystem preservation
- Sewage or wastewater break-

All water uses in the South Saskatchewan River Basin, including loss from evaporation, consume about 6% of the river's average annual supply. Irrigation is the largest human use, and industrial the smallest. Other areas in the



WATER ALLOCATION

Water allocation means deciding how to share the water resource among all the users, as well as ensuring the protection of the aquatic ecosystem. Water allocation is

Control Structures

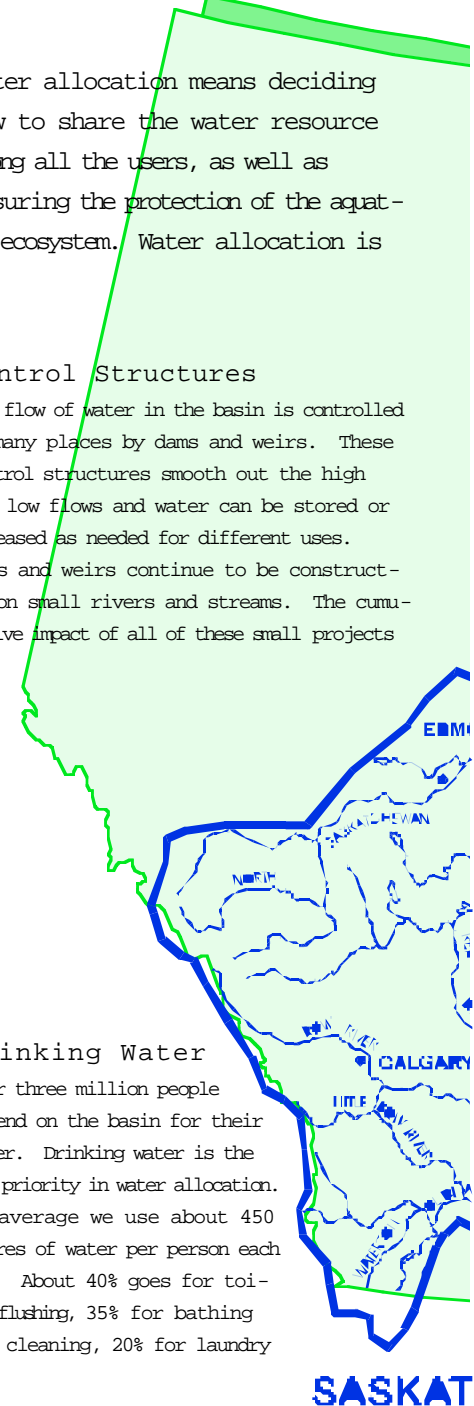
The flow of water in the basin is controlled at many places by dams and weirs. These control structures smooth out the high and low flows and water can be stored or released as needed for different uses. Dams and weirs continue to be constructed on small rivers and streams. The cumulative impact of all of these small projects

Drinking Water

Over three million people depend on the basin for their water. Drinking water is the top priority in water allocation. On average we use about 450 litres of water per person each day. About 40% goes for toilet flushing, 35% for bathing and cleaning, 20% for laundry

Droughts

Too little water is a concern for all users and for the environment. Water is often allocated assuming normal flow years. During droughts, conflicting demands for water increase. Because of its large size and the number of people dependent on it, Lake Diefenbaker requires extra manage-



Groundwater

Out of sight and often forgotten, groundwater is an essential source of drinking water for many communities and individuals and for livestock, irrigation and industry. It also recharges or supplies water to lakes and rivers. Groundwater is the source of many springs in the basin which eventually become creeks and small rivers and streams. The danger is that we may

Irrigation

In the dry climate of the prairies, irrigation is important for growing crops. Irrigation is the largest consumptive use of water in the Basin. For example, in 1991 there were 200 licences for irrigation withdrawals in the Bow River basin for wheat, barley, potato and pulse crops. Irrigation is expected to continue to grow in south-

WHO IS RESPONSIBLE FOR WATER MANAGEMENT?

Water management best occurs by considering an entire basin. Cooperation and coordination is required to balance the needs of different users and because water flows across provincial and international boundaries. The main responsibility for water management rests with provincial governments. Legislation, such as the Manitoba Water Rights Act, sets policy while government agencies, such as SaskWater, administer allocation. Licences are granted to individual users.

Several boards and councils also manage water. For example, the Prairie Provinces Water Board administers the Prairie Provinces Master Agreement on

Aquatic Ecosystem

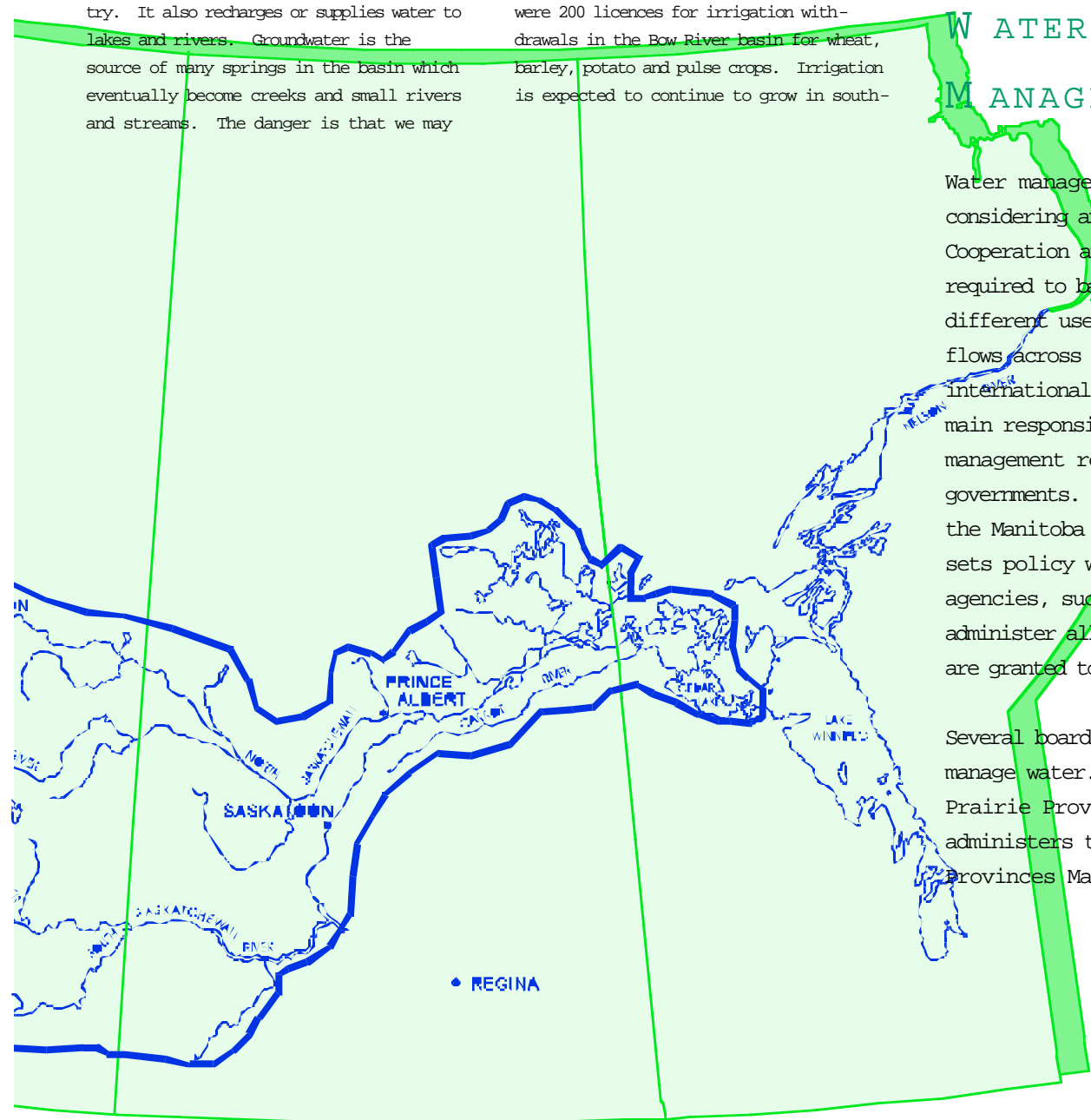
Fish make up only one component of the aquatic ecosystem. Amphibians, insects, plants and microorganisms all depend on a healthy aquatic ecosystem. Ensuring an adequate instream flow of water means that there will be enough oxygen for aquatic life to continue to thrive and sufficient moisture for aquatic plants to grow. An adequate flow keeps sediment levels low and any pollution entering the river is

Wetlands

Wetlands are important for many reasons. They store water, filter pollutants and contribute to groundwater supplies. Valuable habitat for wildlife is provided, as well as giving us recreation and aesthetic enjoyment. Many wetlands in the

Floods

Heavy rainfalls and fast melts of deep snow often cause floods. Some flooding is beneficial for a healthy river ecosystem, for example, providing nutrients for river-bottom forests. But floods can badly damage homes, farms and businesses. Dams, dykes and diversion channels help to



PRairie Provinces Water Basin

WATER MANAGEMENT ISSUES FOR THE FUTURE

Escalating needs for water will increase conflict among users and threaten the aquatic environment. Other future issues which we must work on include:

- § **planning for long-term uses**
What will new water requirements be? Do we have enough water for all of these uses?
- § **managing the demand for water**
We have emphasized getting the most water to the most people. The prairie provinces

are among the biggest users of water in Canada. Can we reduce the amount of water we use at home, in industry, in the fields? Can new technology help us to do this?

- § **coordinating decisions**
Do water management and allocation decisions in one area of the basin conflict with those in another area? Can we enhance decisions made at a local level by more cooperation? How is the issue of aboriginal water rights addressed?

- § **costs of water**
Canadians pay very little for their water compared to other countries. Are we paying the real cost of water and how much is this?

- § **environmental impacts**
Many decisions about water are made without environmental review. What is the cumulative impact of all those individual decisions, such as

For More Information

This fact sheet was published by Partners FOR the Saskatchewan River Basin.

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WHAT YOU CAN DO

Get involved in water management!

w Conserve water in your home, school, farm or workplace. Many towns and cities have water conservation ideas, some of which are easy to do.

w Get informed. Learn more about water management in general. Partners FOR the Saskatchewan River Basin has a network of partners who can provide more information on water management. Who uses the water, how much do they use, how are decisions made?

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