Bow River basin

What is the Bow River basin? A river basin or watershed is high at its edge and low in the centre where the river flows. The Bow River basin or watershed includes all the land that feeds water to he Bow River and its tributa

Who lives here? Over a million people...and growing fast! The Bow River basin is the most densely populated river basir in Alberta. Less wate is available per person here than in any other river basin in the province. And yet, in the last ten years, the population of the basin has grown by over a quarter of a million people. So we are

facing a challenge!

An ancient homelan he lands of the Bow River basin have been home to First ons people for thousands of years. Today, the Stoney oda Nation has reserve lands throughout the foothills of the Bow River basin. Tsuu T'ina Nation reserve lands extend west from Calgary to Bragg Creek, and Siksika Nation nds straddle the Bow River valley near Bassand

and prairies Bow River waters come from the

Mountains, an area largely otected within parks. East of the

ountains, the Bow River flows through

othills and then through rolling prairie

he Bow River also flows through the C

f Calgary, home to most of the basin's

The water cycle in the Bow River basin

Prairie lands: living in the rain shadow So effective are the Rocky Mountains at stripping moisture from astward-moving air masses that little is left for the prairie areas, eating a 'rain shadow'. This is why irrigation is vital to agriculture e Bow River is the only dependable source of water

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Storing our water: ature's water towers and cisterns er flows the entire length of the Bow er in less than two weeks. Why then ause nature stores a lv releases water throughout the

> sin. Water is stored in snowpack ciers, wetlands, and

Bow River near Lake Louise

ate spring snowpack at Bow Lake Parkway, Banff National Parl n snowmelt feeds water to t

loud catchers

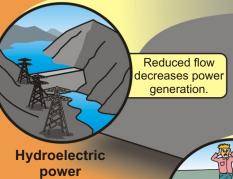
Imost all the water in the Bow iver comes from the Rocky Mountains. his mountain chain forces air to rise and cool, ausing moisture to condense and fall as rain or snow. This precipitation, together with the meltwaters from glaciers that release ancient snowfalls, feed the Bow River through its many mountain tributaries. Even groundwater that feeds the Bow River begins its life as rain or snow.

What is groundwater?

Rain and snowmelt infiltrate the ground. Soil and rock act as giant sponges full of tiny pores and cracks that are usually less than millimetres in size. Below the water table, these holes are full of water. This is **groundwater**. Groundwater slowly travels through connected pores and cracks, just centimetres to hundreds of metres per year. Any rock or sediment that yields useful amounts of water is an **aquifer**. The volume of groundwater below us dwarfs the volume of water stored in lakes, wetlands, and rivers.







Lower water tables cause some shallow wells to go dr Groundwater

Warmer riv temperatures st cold-water species such as trout.



Our family of rivers

South Saskatchewan River. This family of rivers carries water

rom the Rocky Mountains across the dry southern prairies of

Iberta and Saskatchew

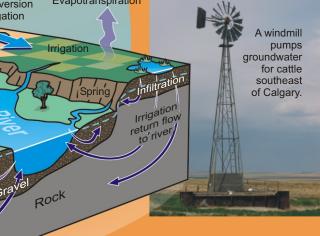
Where does the Bow he Bow River joins the Oldman River near Medicine Hat to fo

No glaciers? What then Many people wonder what will happen to the river if the glaciers melt away. In fact, glacier meltwaters contribute less than 1% of the total annual flow to the Bow River so their overall contribution is small. However, the portion of Bow River water derived from glaciers rises during the summer as snowmelt wanes. During a drought year with reduced snowfall and rain, the relative contribution of glacier meltwater to the Bow River is higher. Without glaciers

in the Bow River basin, water supply during drought years would be much more challenging.

However, as long as it snows and rains every year, we can expect the river to keep moving.

Groundwater: the hidden reservoir



Groundwater feeds the river oundwater and surface water are one connected water system. Water wells intercept groundwater that may be on its way springs that feed

ms and rivers

Largely

water uses

water uses

recreation

wastewater

lisposal

fisheries

Shallow groundwate the precious drinkable part southern Alberta, oil and gas drilling has shown at groundwater is found to depths of four ilometres or more. However, most of this proundwater is very salty. Only shallow

proundwater is potable or fit to

Sharing our waters

ere are many ways we depend or the Bow River There are many, many users of the Bow River water and all are

dependent on this shared water

supply. These many users - wildlife industry, municipalities, hydropower, agriculture, and recreation commonly have no other source of water. So, we must protect and Largely water uses municipal water supply

vdropowe

water use the Bow River Not all water use is the same! Some water use occurs in the river, such as by wildlife and for fisheries and

recreation. Some water is withdrawn from the river, used, and returned (non-consumptive use). Municipalities return over 90% of the water they use as treated sewage. Some water is withdrawn from the river and not returned (consumptive use). In dry years, irrigation returns about 20% of what it withdraws. Most of the rest is used by plants, whereas some evaporates and a small amount sinks into the ground. Withdrawal of water from the river

reduces river flow and can have an impact on wildlife habitat in and along the river.



water use

Industrial No

34%

commercial (e.g. le infrastructure

Residentia

52%