



The Bow River on its journey from the Rocky Mountains to the sea. Photo: L Chaffer

Canada 5: The Bow River

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NOTE: this is a condensed and adapted version of an article published in the Geography Bulletin: Vol 47, No 4, 2015

GLOSSARY (<http://syllabus.bos.nsw.edu.au/hsie/geography-k10/glossary/>)

Catchment area: The area drained by a river or water body. Also known as river basin.

Groundwater: water located beneath Earth's surface filling the spaces between grains of soil or rock.

Precipitation: Forms of water falling from the atmosphere to the Earth's surface

Spatial distribution: The location and arrangement of particular phenomena

Water cycle processes: physical changes to water that change its state and geographical location.

Climate change: A long-term change in regional or global climate patterns eg. annual precipitation, frequency of weather events



Bow Lake at the headwaters of the Bow River. Photo: L Chaffer



Bow River at Banff. Source: <http://www.theglobeandmail.com/news/national/protecting-the-health-of-albertas-bow-river/article26767720/>

GEOGRAPHICAL INQUIRY

1: Independent inquiry

Analyse SOURCES to answer an inquiry question about the challenges to water security in the Bow River catchment.

2: Guided inquiry

Answer sets of questions to discuss an inquiry focus question about water resources in the Bow River catchment.

3. Class inquiry

A class group interpret and discuss visual sources to draw conclusions about water resources in the Bow River catchment and create a visual presentation.



The Bow River flowing through the city of Calgary Photo: L Chaffer

WATER IN THE WORLD: BOW RIVER, CANADA

SOURCE A: Location of Calgary within Canada



SOURCE B: Location of the Bow River within the Saskatchewan River Catchment



Image source: https://en.wikipedia.org/wiki/Bow_River#/media/File:Saskatchewanrivermap.png

What catchment do you live in?

Can you visualise your own catchment on a map?

What is the main river in your catchment and where does this river begin and end.

SOURCE C: Journey of the Bow River



Image source: <http://www.theglobeandmail.com/news/national/protecting-the-health-of-albertas-bow-river/article26767720/>

WATER IN THE WORLD: BOW RIVER, CANADA

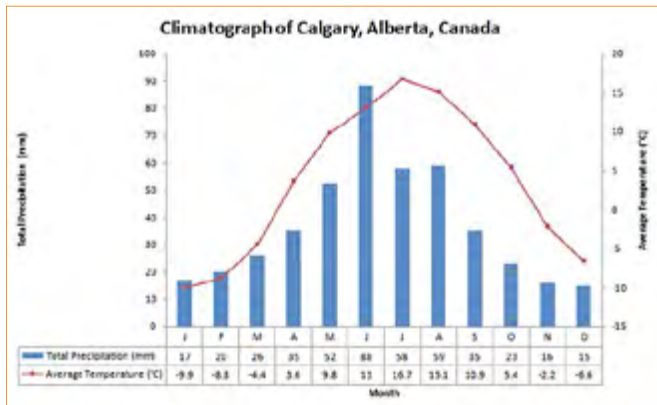
SOURCE D: Facts and statistics

a. Basic facts

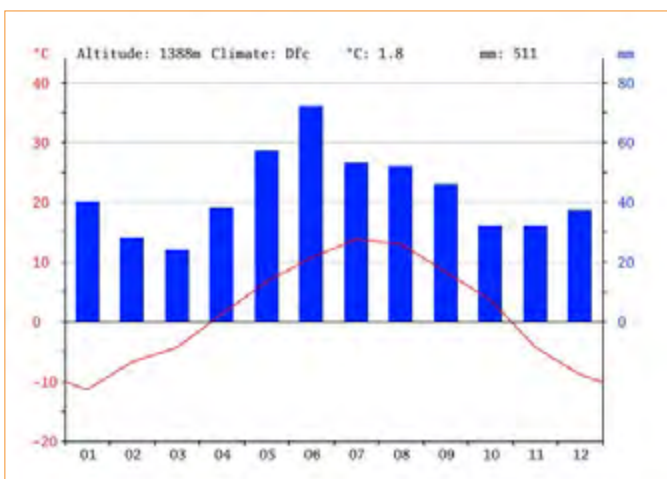
FEATURE	FACTS
Country	Canada
Province	Alberta
Source	Bow Glacier (Altitude 1,960 metres)
Mouth	South Saskatchewan River (Altitude 700 metres)
Length	587 kilometres
Catchment	26,200 square kilometres
Discharge	129 cubic metres per second (Average)
	1,640 m ³ /s maximum discharge
	3 m ³ /s minimum discharge

Source: <http://geogratis.gc.ca/api/en/nrcan-rncan/ess-sst/d8fb41f0-8893-11e0-92bb-6cf049291510#distribution>

b. Climate graphs for Calgary and Banff



Calgary: https://ecozoneexperts.wikispaces.com/file/view/Calgary_Climate.png/125443907/Calgary_Climate.png



Banff: <http://en.climate-data.org/location/9245/>

SOURCE E: Topography of the Bow River catchment (Drainage Basin)



Source: http://www.thebowriver.com/bow_river_basin_waterscape.htm

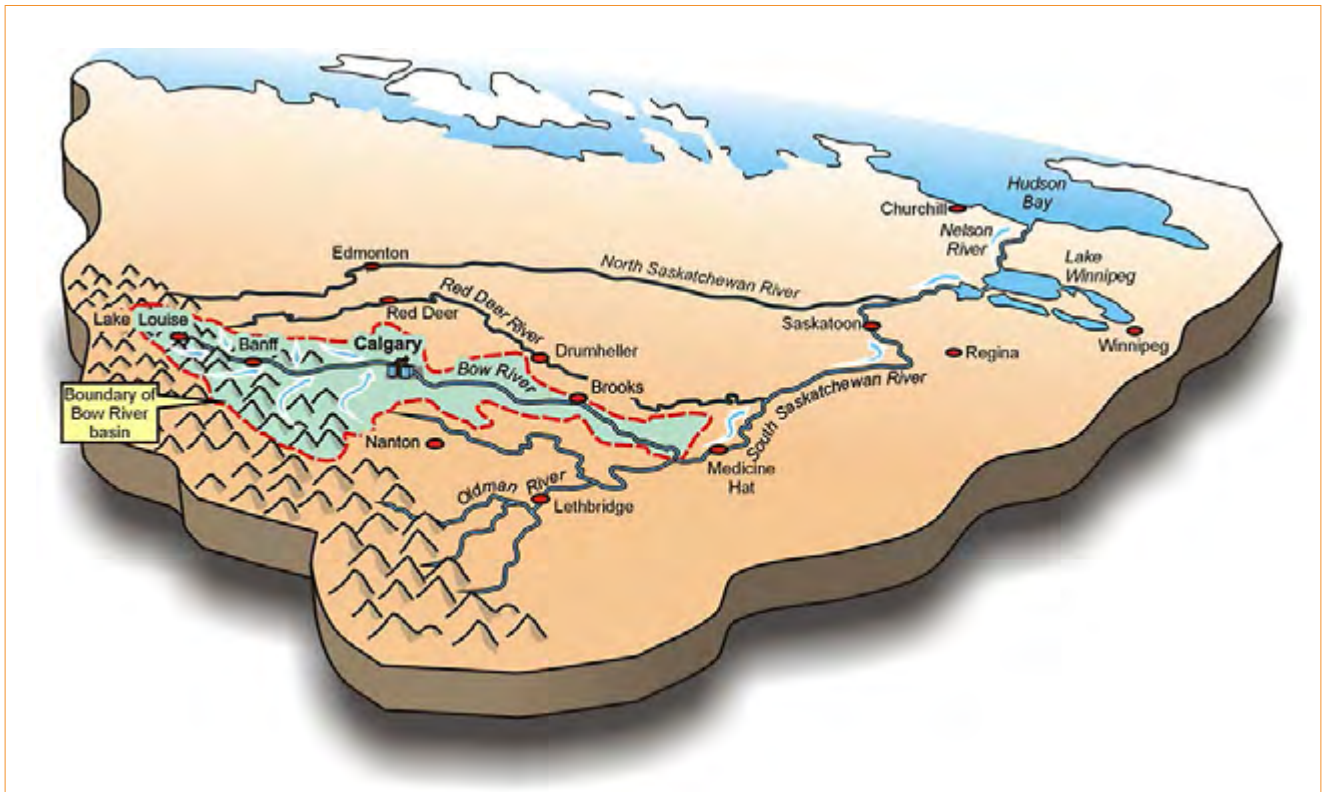
Bow River Valley



Source: https://upload.wikimedia.org/wikipedia/commons/6/63/View_over_Bow_River_Valley_from_Sulphur_Mountain_Summit_-_Banff_-_Alberta_-_Canada.jpg

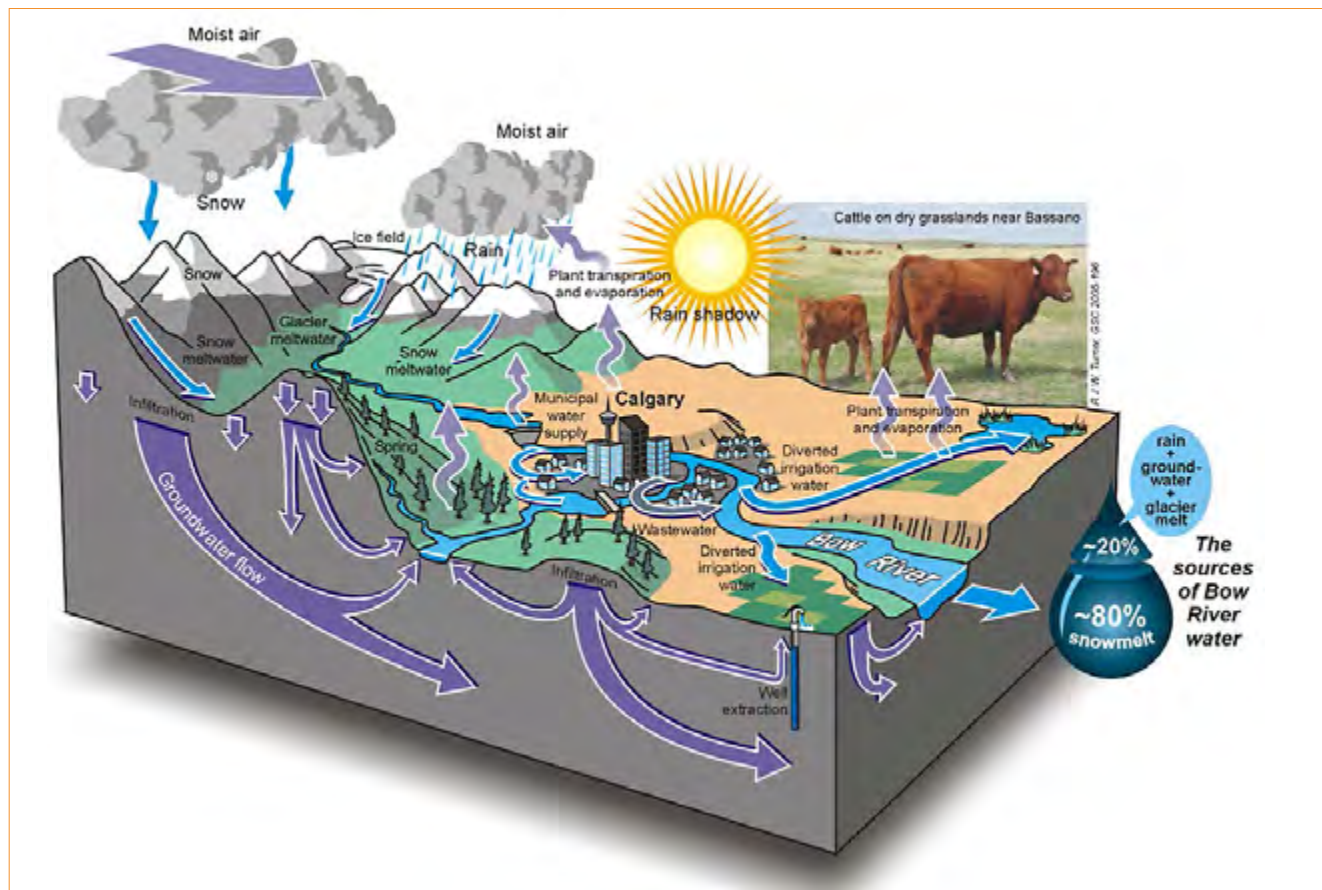
WATER IN THE WORLD: BOW RIVER, CANADA

SOURCE F: Journey of the Bow River



Source: http://www.thebowriver.com/bow_river_basin_waterscape.htm

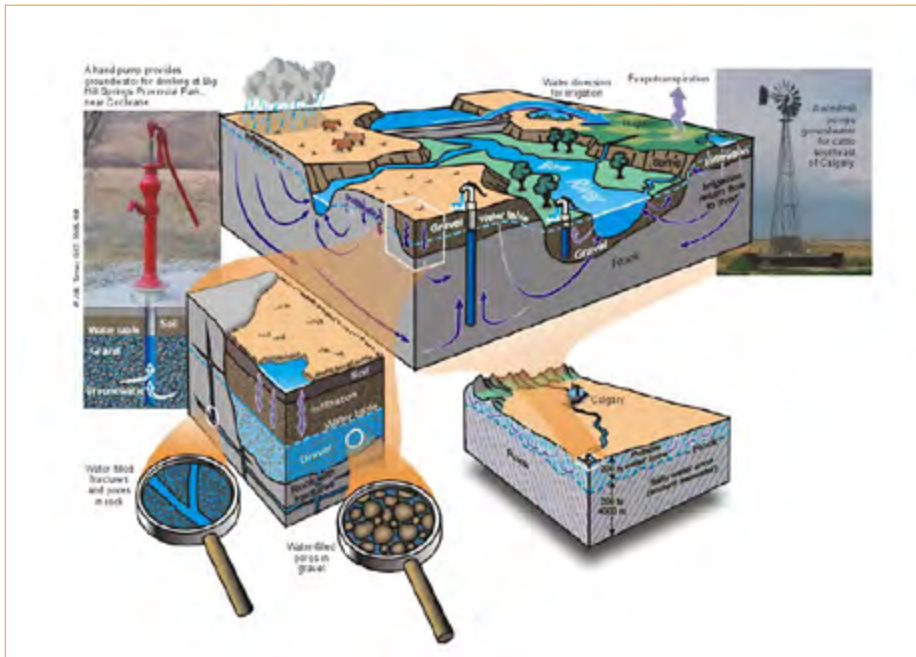
SOURCE G: Bow River Catchment water cycle



Source: http://www.thebowriver.com/bow_river_basin_waterscape.htm

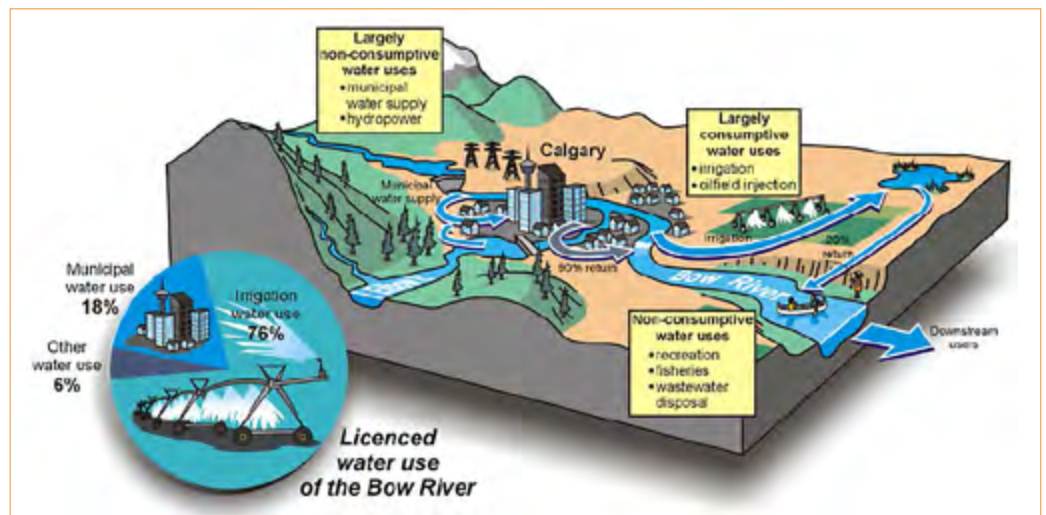
WATER IN THE WORLD: BOW RIVER, CANADA

SOURCE H: Groundwater resources



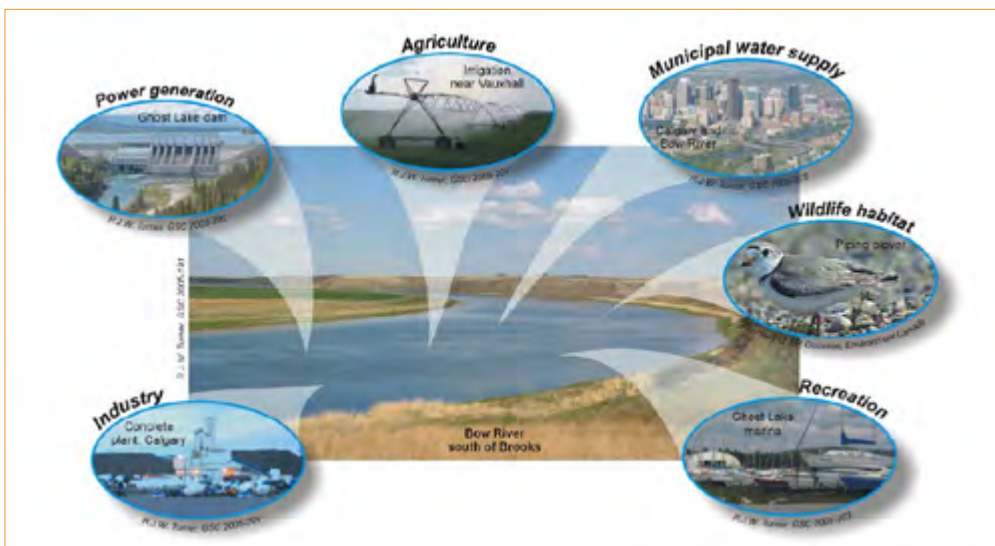
Source: <http://www.cgenarchive.org/bow-river-clean.html>

SOURCE I: Water use



Source: http://www.thebowriver.com/bow_river_basin_waterscape.htm

SOURCE J: Competing water uses



Source: http://www.thebowriver.com/bow_river_basin_waterscape.htm

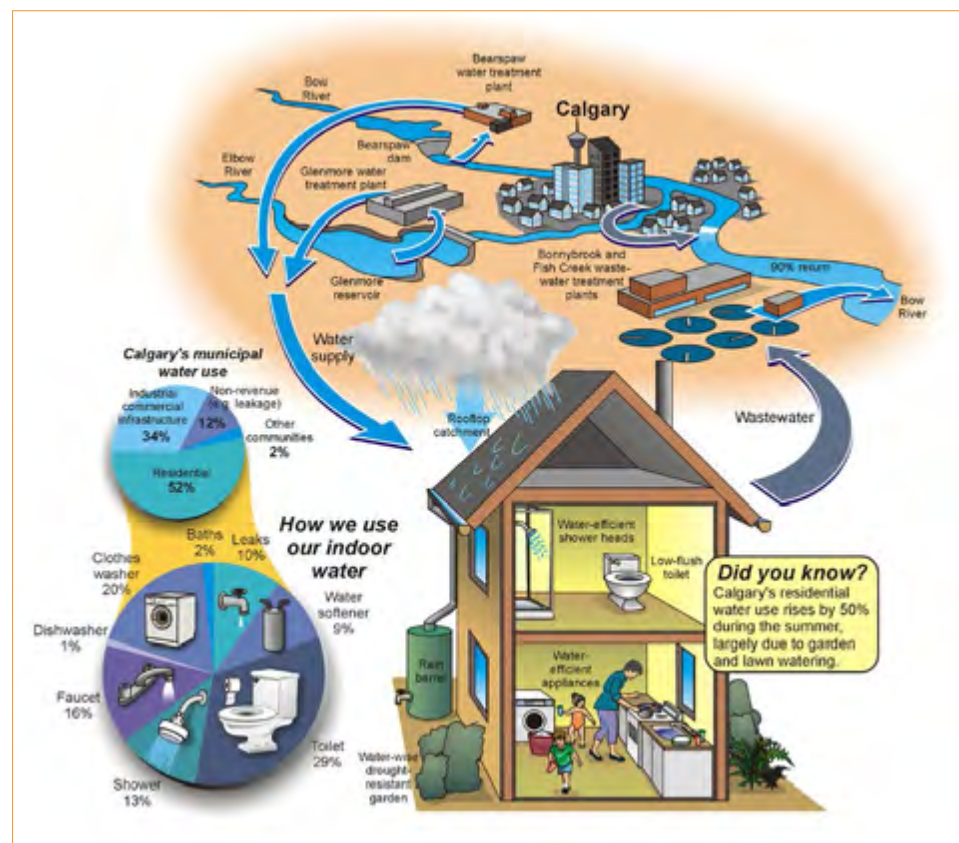
WATER IN THE WORLD: BOW RIVER, CANADA

SOURCE K: Making water available for human use



Source: <http://www.cgenarchive.org/bow-river-clean.html>

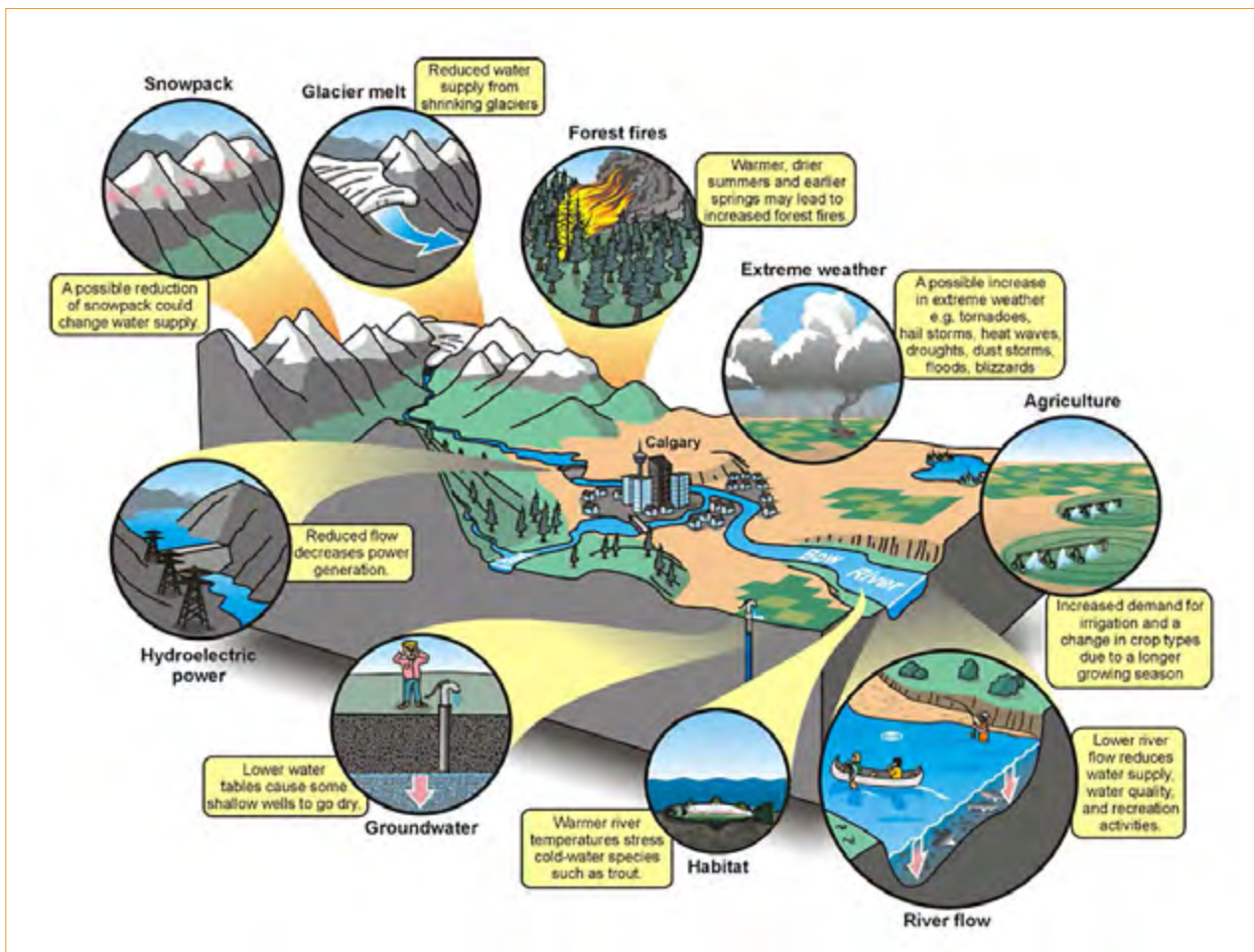
SOURCE L: Urban water use



Source: <http://www.cgenarchive.org/bow-river-clean.html>

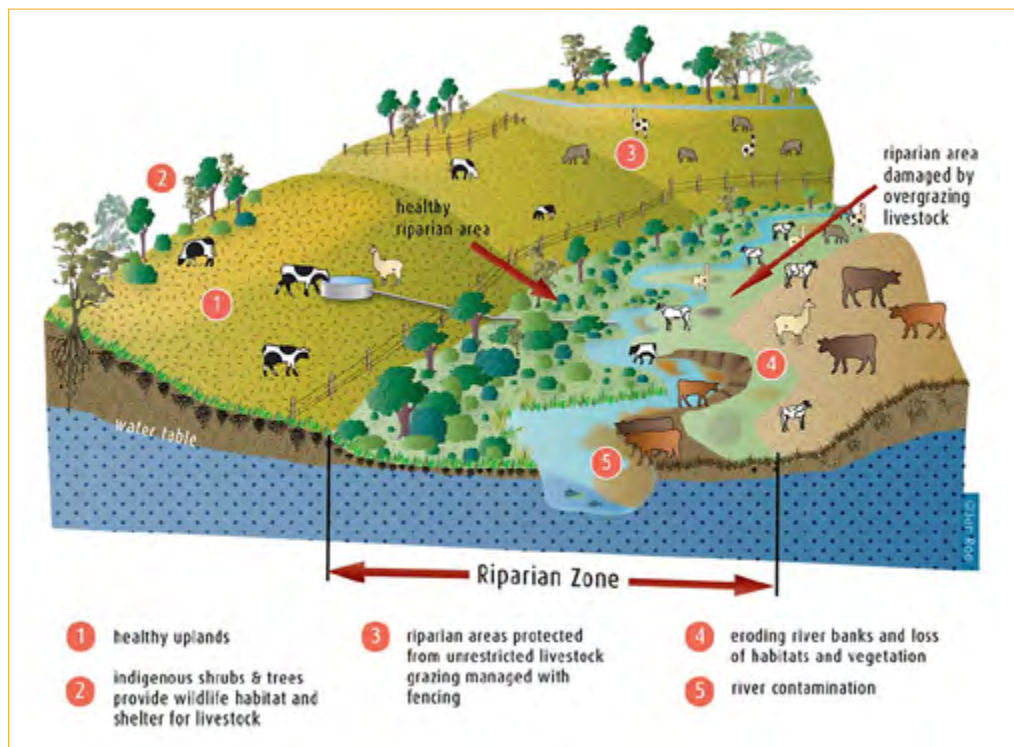
WATER IN THE WORLD: BOW RIVER, CANADA

SOURCE M: Climate change threats



Source: http://www.thebowriver.com/bow_river_basin_waterscape.htm

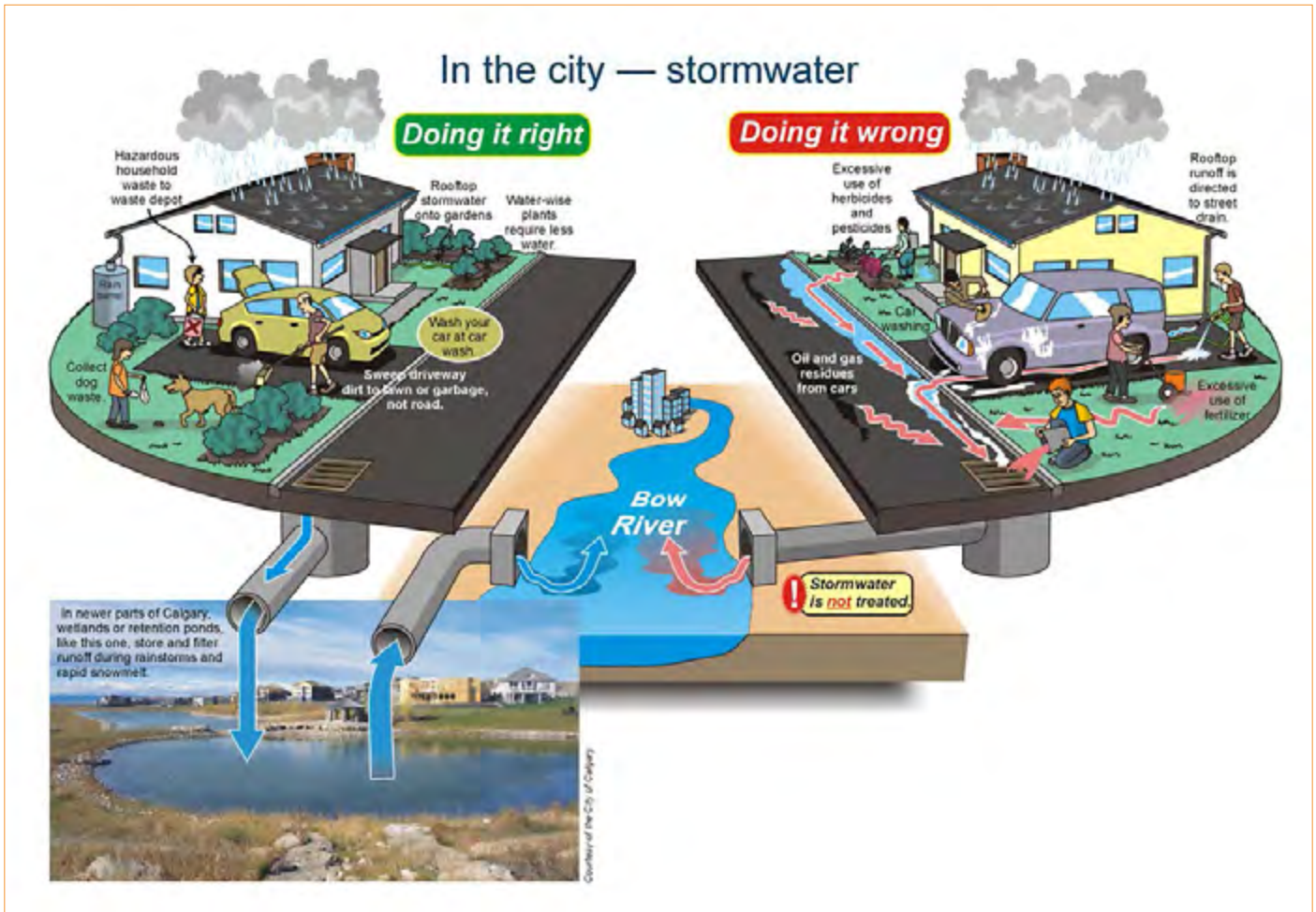
SOURCE N: Rural water management



Source: <http://theriparianproject.com.au/about> and <http://www.cgenarchive.org/bow-river-clean.html>

WATER IN THE WORLD: BOW RIVER, CANADA

SOURCE N: Urban water management



Source: <https://www.cgenarchive.org/bow-river-clean.html>

Ice skating on frozen River in Calgary Bowness Park (Sluice Gate, an arm of the Bow River).



Source: <https://upload.wikimedia.org/wikipedia/commons/f/f/Dilmaghanian00711.JPG>



How does your catchment compare to the Bow River catchment in water resources, water uses and water management issues?

Will climate change impact your catchment?

