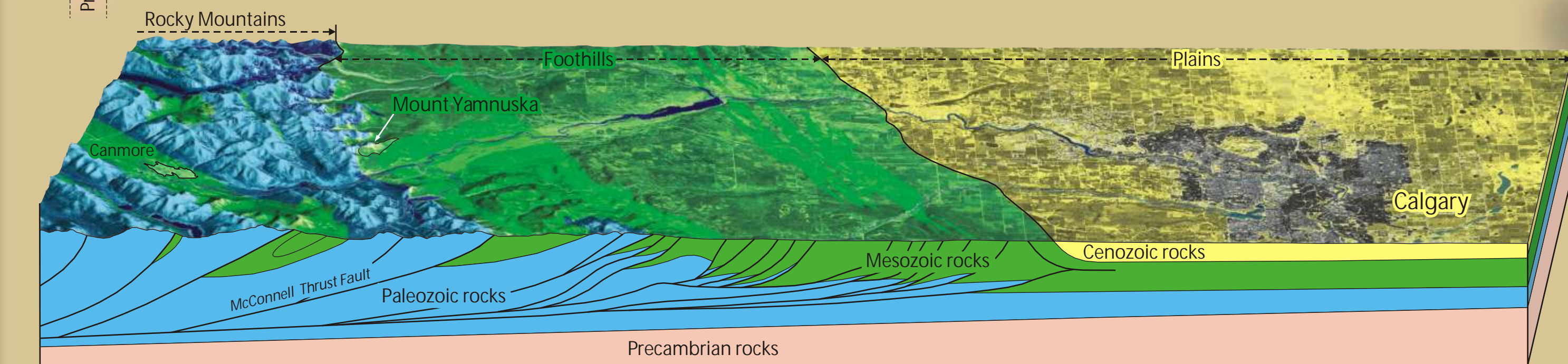
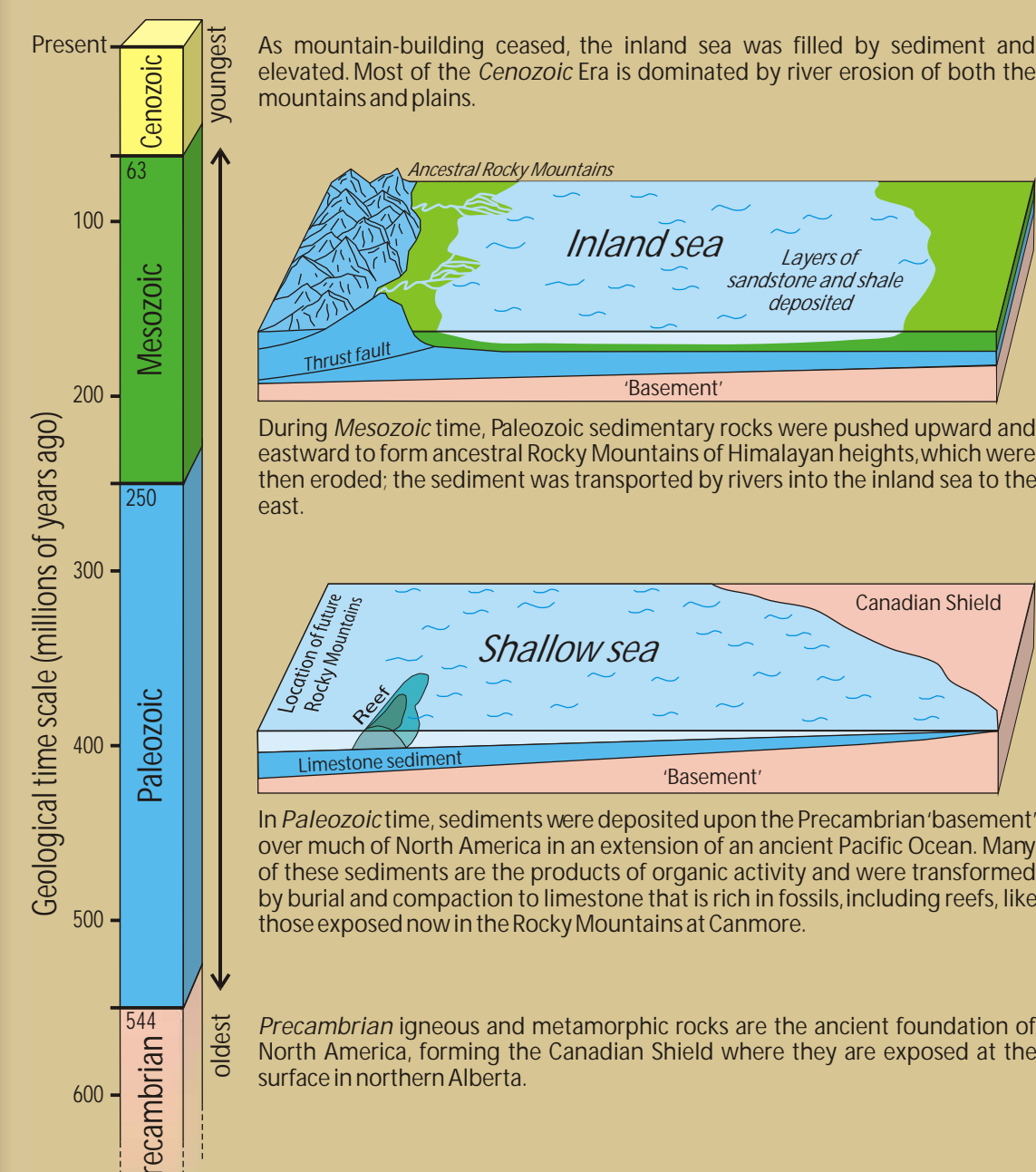


# GEOSCAPE CALGARY

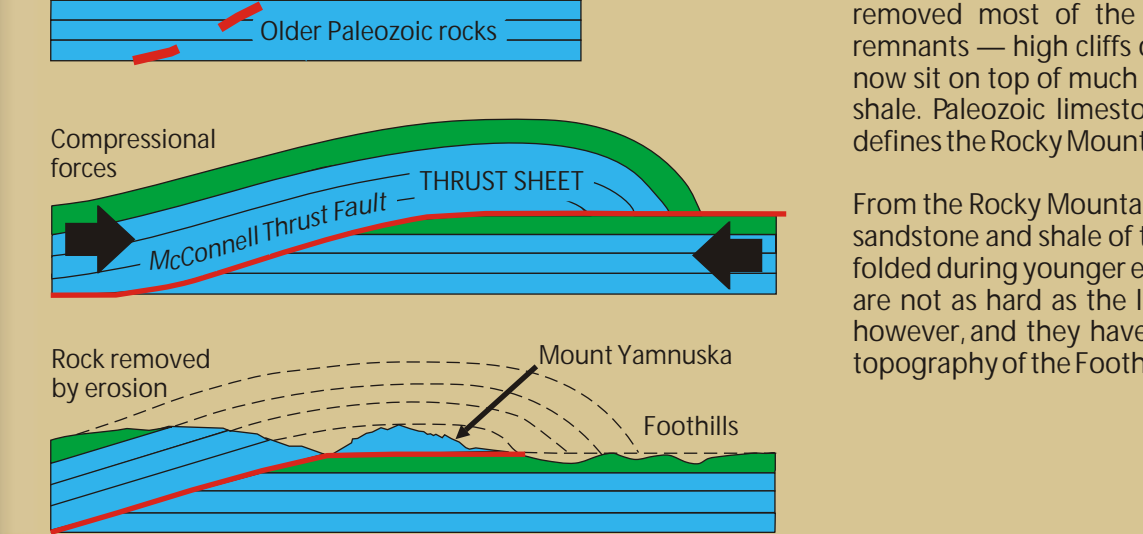
## Landscapes then...

Geological time is divided into four eras (from youngest to oldest): Cenozoic, Mesozoic, Paleozoic, and Precambrian. The main events in the geological story of the Calgary region take place between 544 million years ago (the start of the Paleozoic Era) and the present. The story begins in the Precambrian, at the bottom of the time scale.



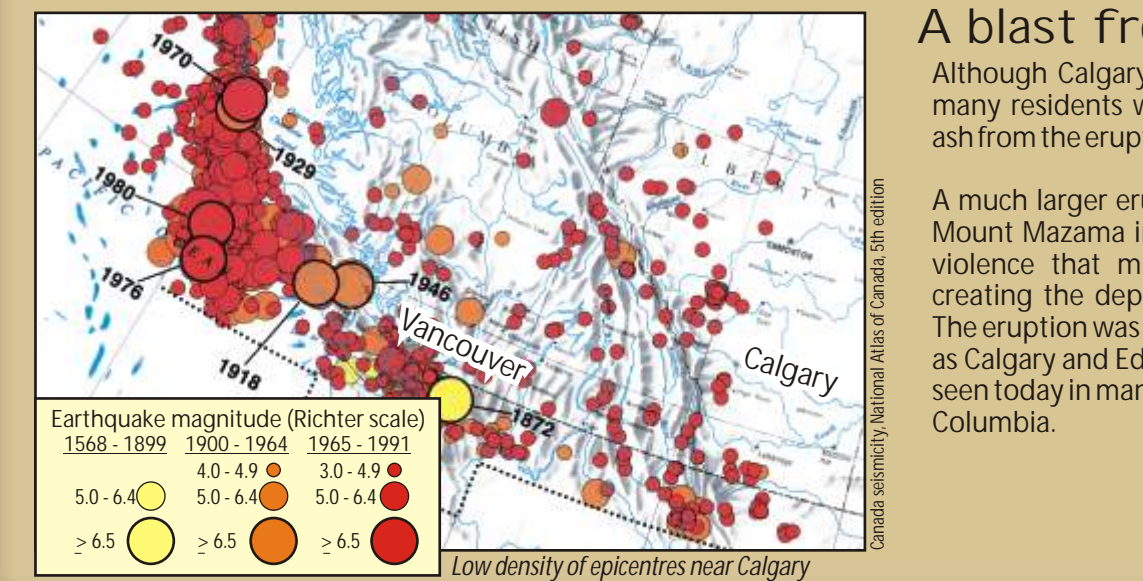
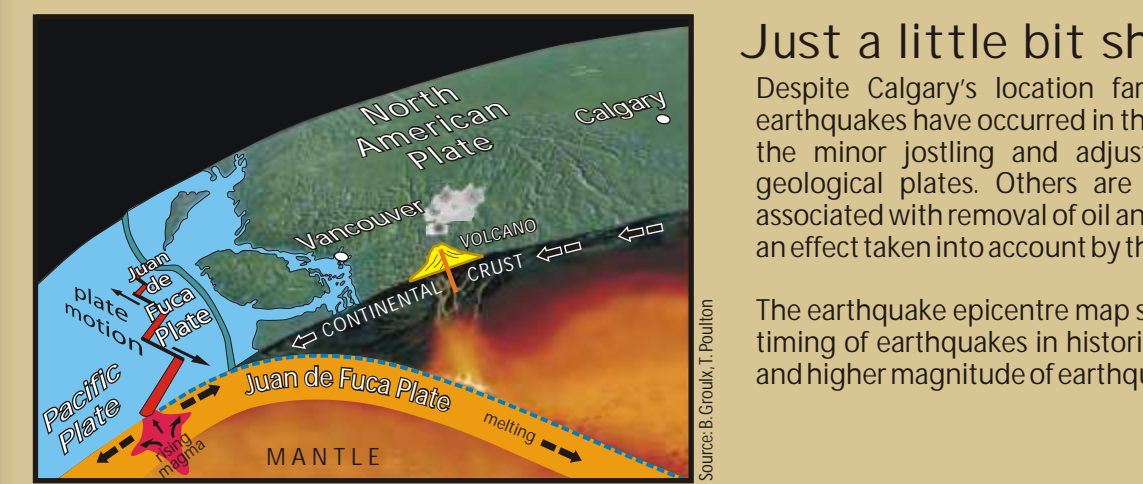
## Mountain building

During the building of the Rocky Mountains, from about 140 million to 40 million years ago, huge slabs of Paleozoic sedimentary rock (thrust sheets) were shifted tens of kilometers northward and upward on top of much younger rock formations. Enormous tectonic forces over geological time allowed the rock to move and build slowly like this.



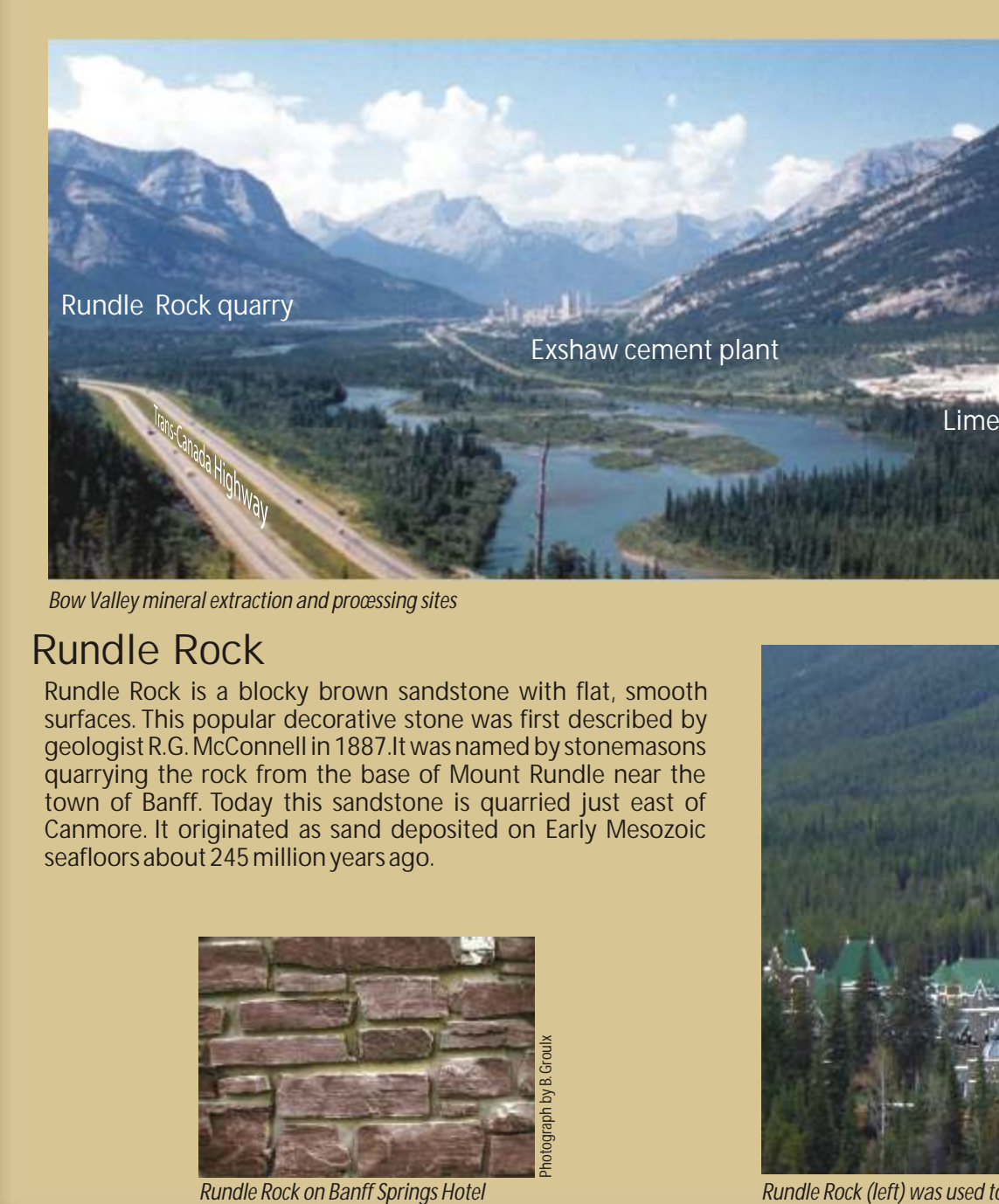
## Location, location...

Calgary is located in a geologically stable setting, 800 km inland from active faults and volcanoes. The faults are related to the subduction of the Juan de Fuca Plate under the continental crust of North America and are a major source of earthquakes on the West Coast. As the oceanic crust on the plate descends, it melts and gives rise to some of the volcanoes in the west.



## Rock resources

Valuable building stone and aggregate materials are abundant in the mountains and along the Bow River valley reducing the need for lengthy transport. Did you know that the Calgary Tower and the Banff Springs Hotel were built with materials from our own backyard?



## and now

### Majestic mountains

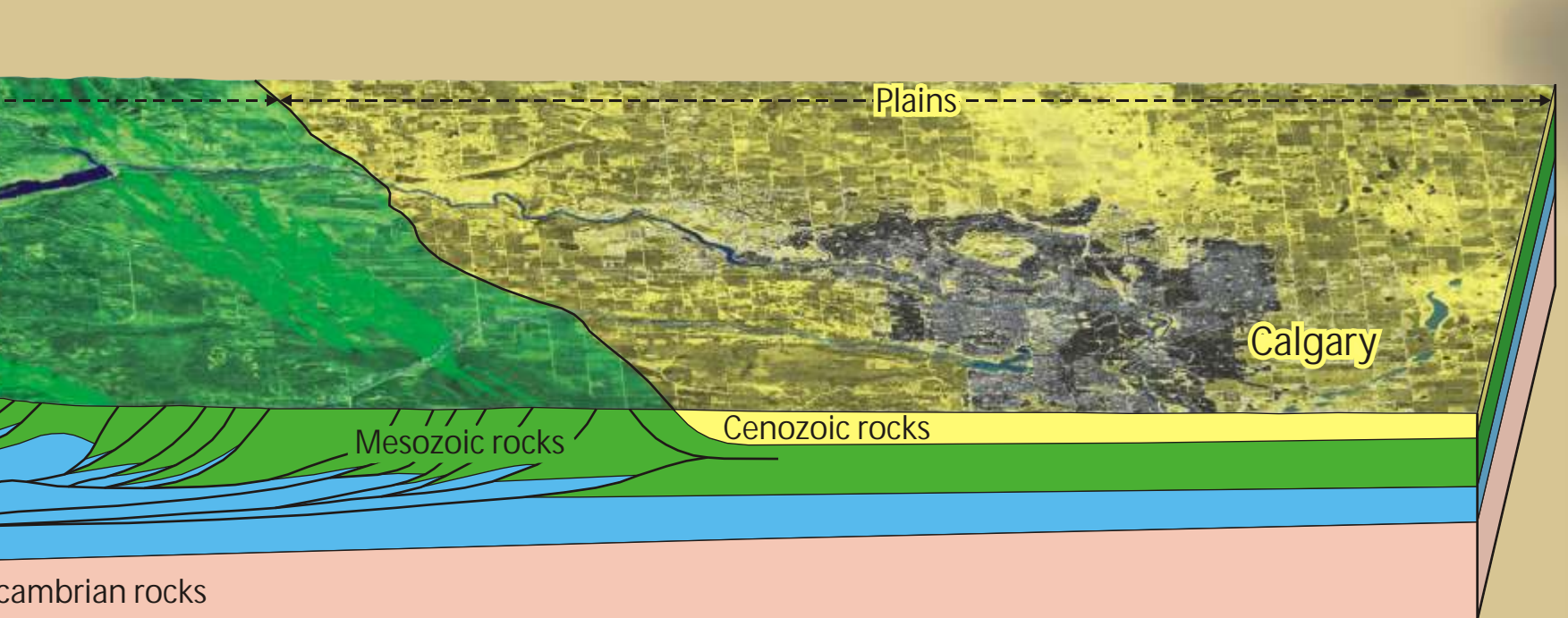
Driving from Calgary to Canmore, it is hard to miss Mount Yamnuska, the most easterly peak north of the Trans-Canada Highway. It is a striking example of Paleozoic limestone deposited about 520 million years ago, that was thrust on top of younger (Mesozoic) sandstone and shale deposited about 75 million years ago.



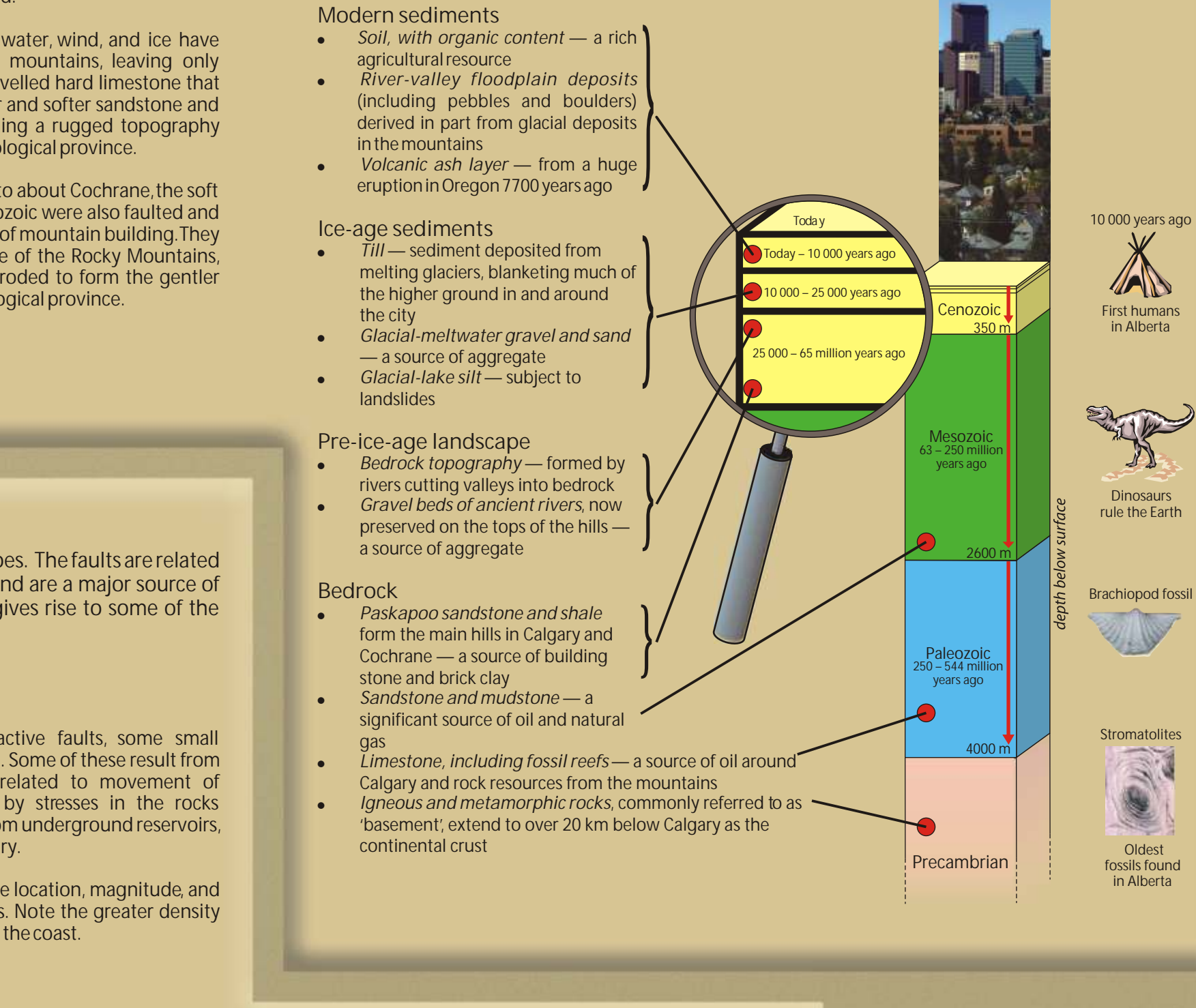
### Peaceful plains

The Plains geological province, from Cochrane east to Manitoba, is made of sedimentary rocks not affected by mountain building and lies undisturbed upon the original basement.

The main hills in the Calgary and Cochrane areas are remnants of a much higher plain from 1 million years ago, that has been largely removed by river erosion. The eroded land surface was modified by glacial erosion during the Ice Age, and the river valleys were the site of sediment deposition as the glaciers melted. Most recently, even in the last 10,000 years, have cut down through ice-age sediments to their present levels.

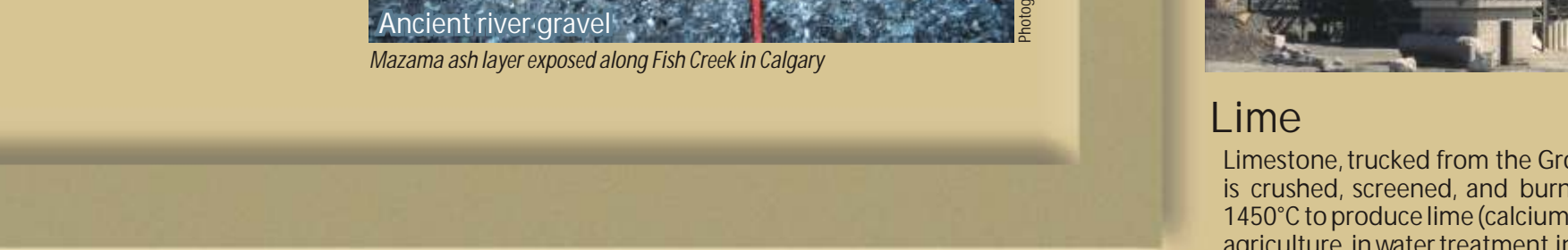


## If you just kept digging under Calgary...



### A blast from the past

Although Calgary is a long way from active volcanoes, many residents will remember the dusting of volcanic ash from the eruption of Mount St. Helens in 1980.



### Rock resources

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We live where the Bow and Elbow rivers meet after flowing down from the Rocky Mountains and winding through the Foothills. A dynamic landscape surrounds us, the product of ancient mountain building, succeeding ice ages, and river erosion. To our west, the Rocky Mountains bring us warm Chinook winds, abundant water, and recreational opportunities unparalleled on Earth. Beneath the prairie landscape lies a sedimentary basin rich in natural resources, including oil, natural gas, and coal.

We play a major role in shaping our landscape. As the population of Calgary grows, so does the need for wise land-use decisions based in part on geological hazard assessments and resource protection. It is necessary to understand the Earth's materials and processes that shape our geological landscape in order to make knowledgeable decisions that will allow us to enjoy our home in the future.

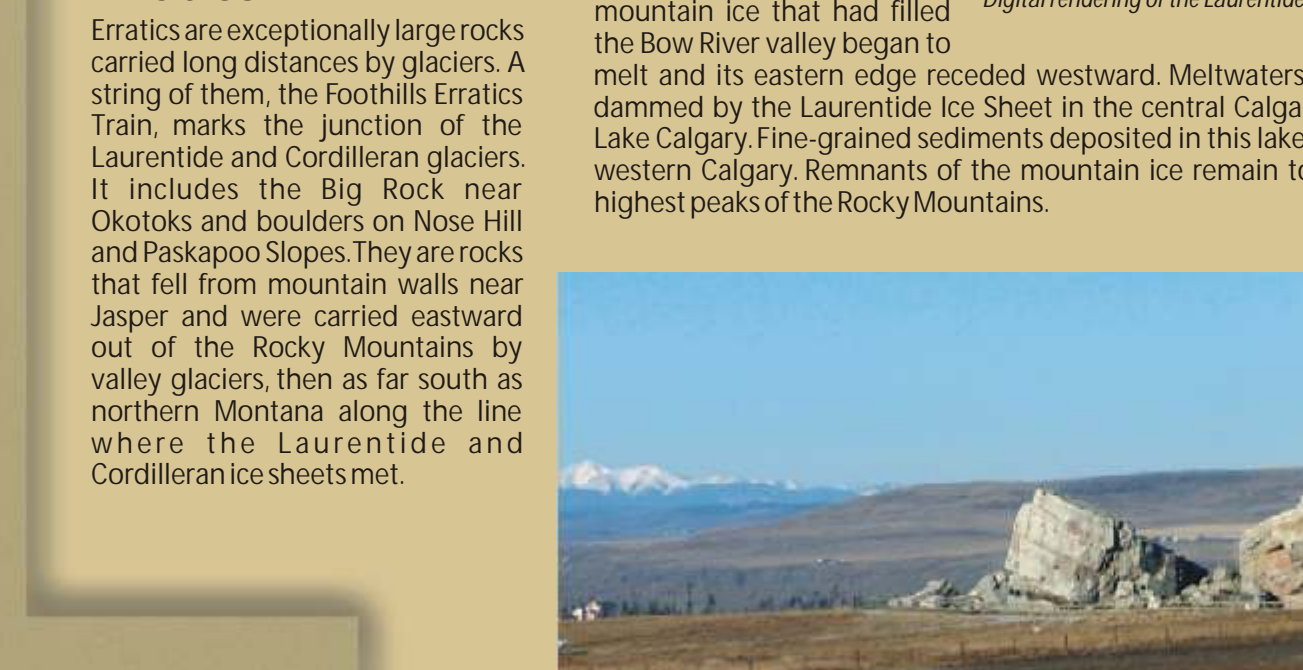
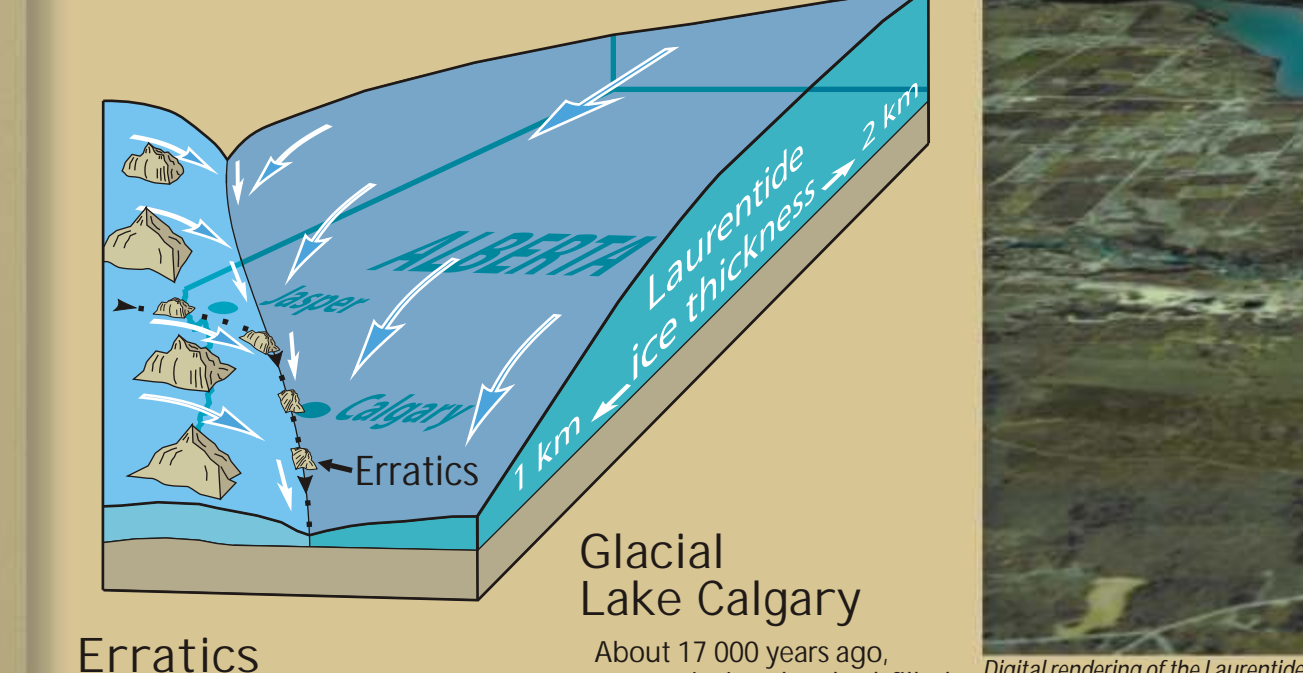
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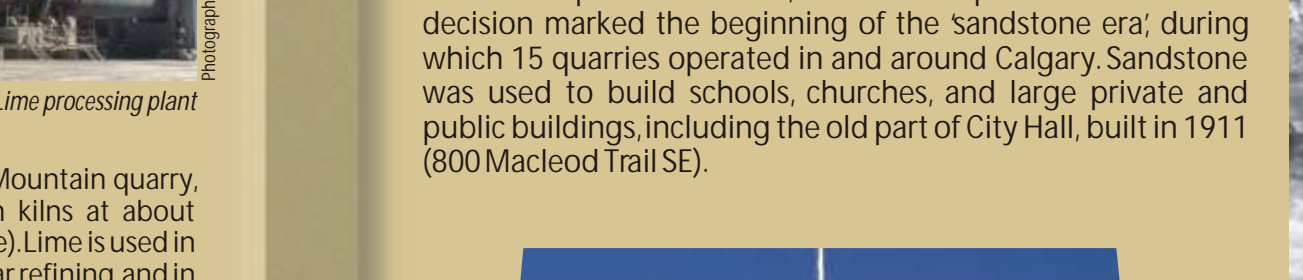
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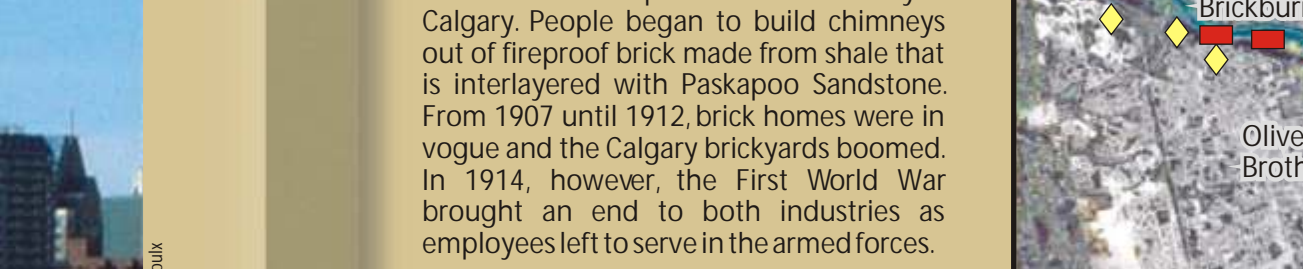
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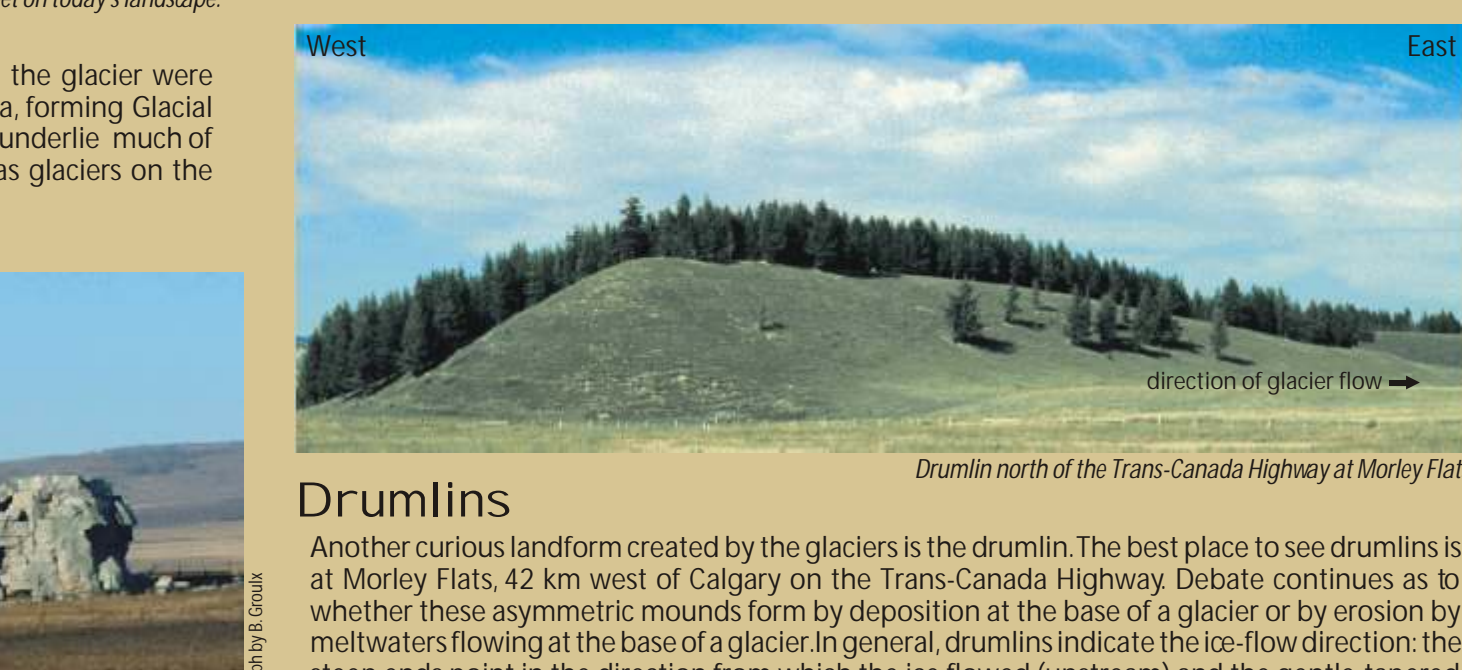
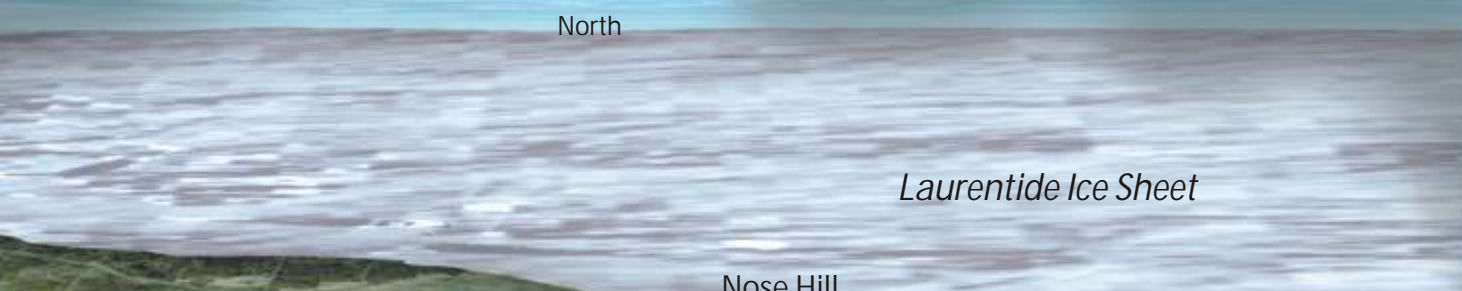
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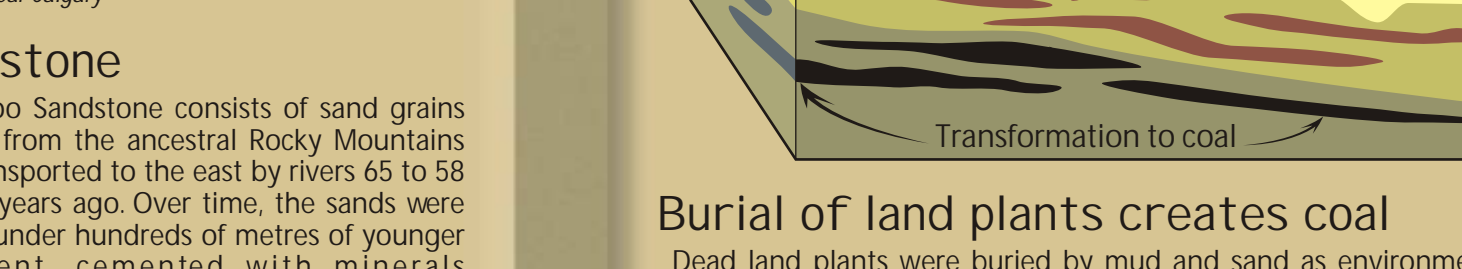
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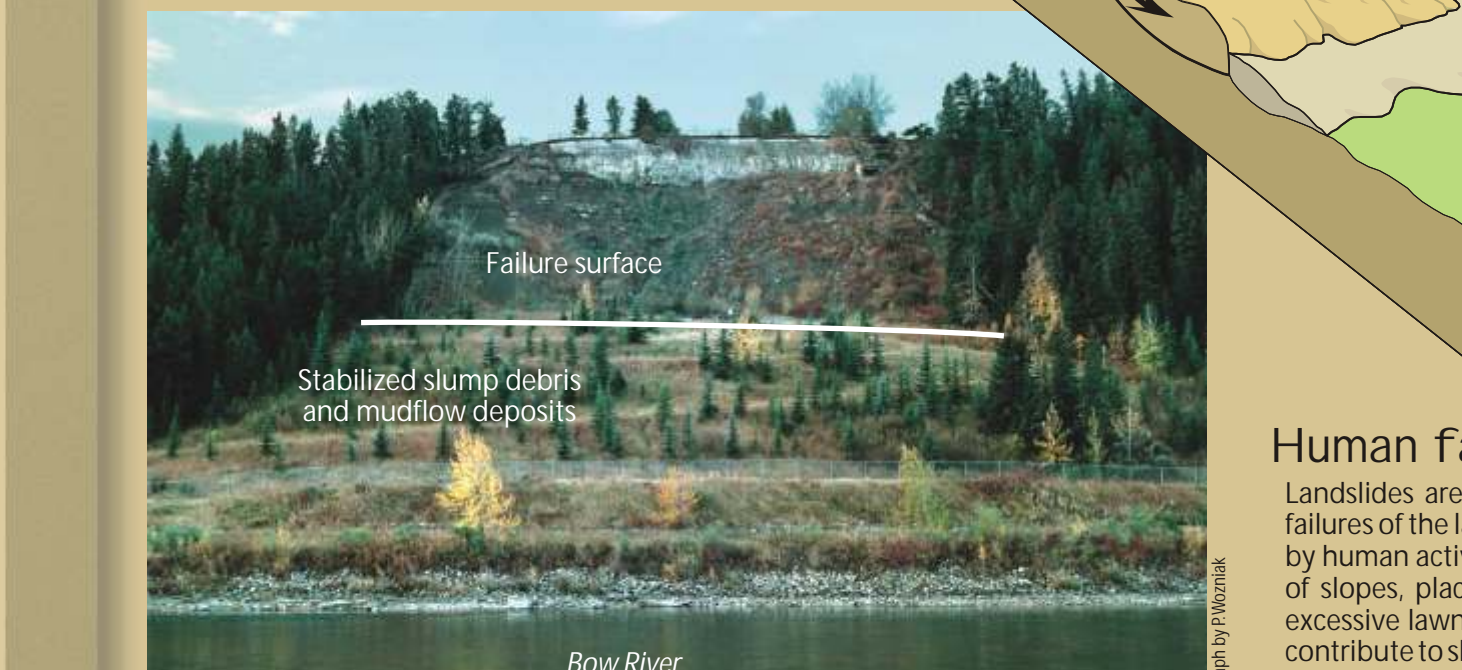
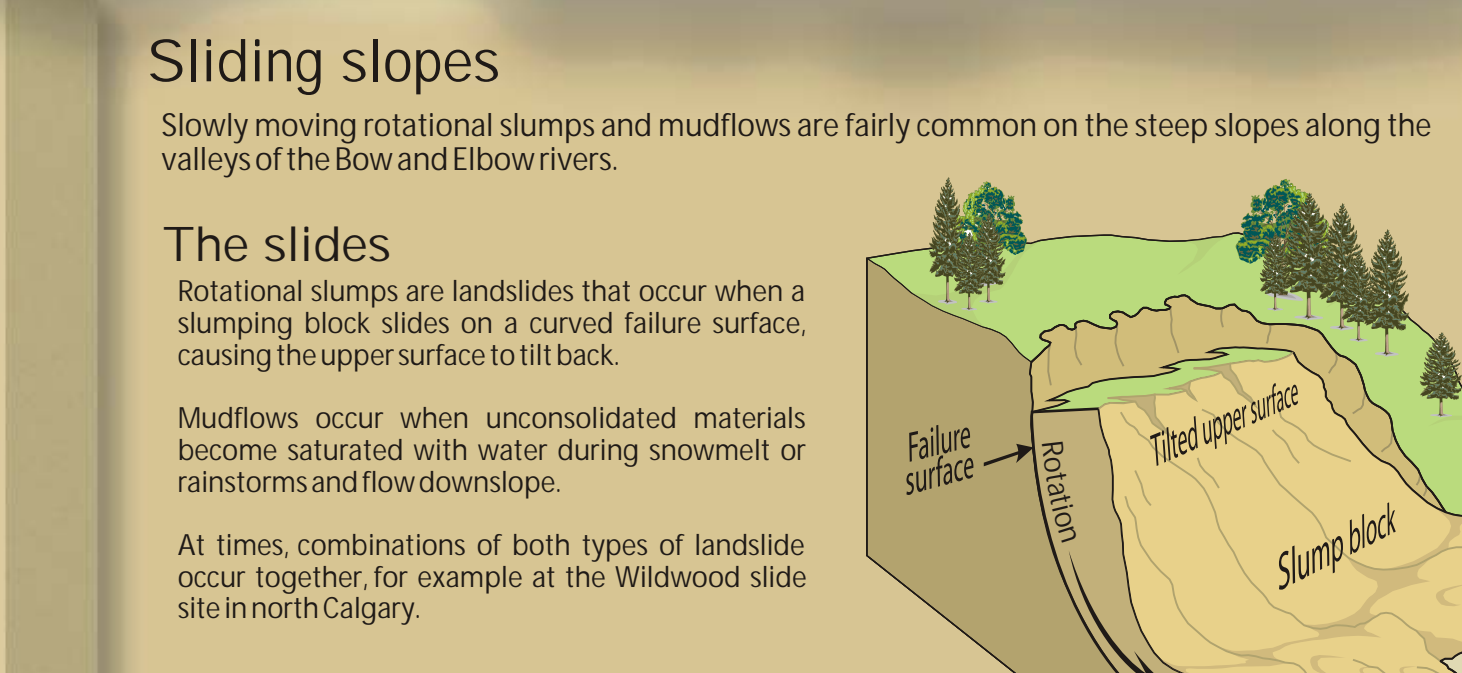
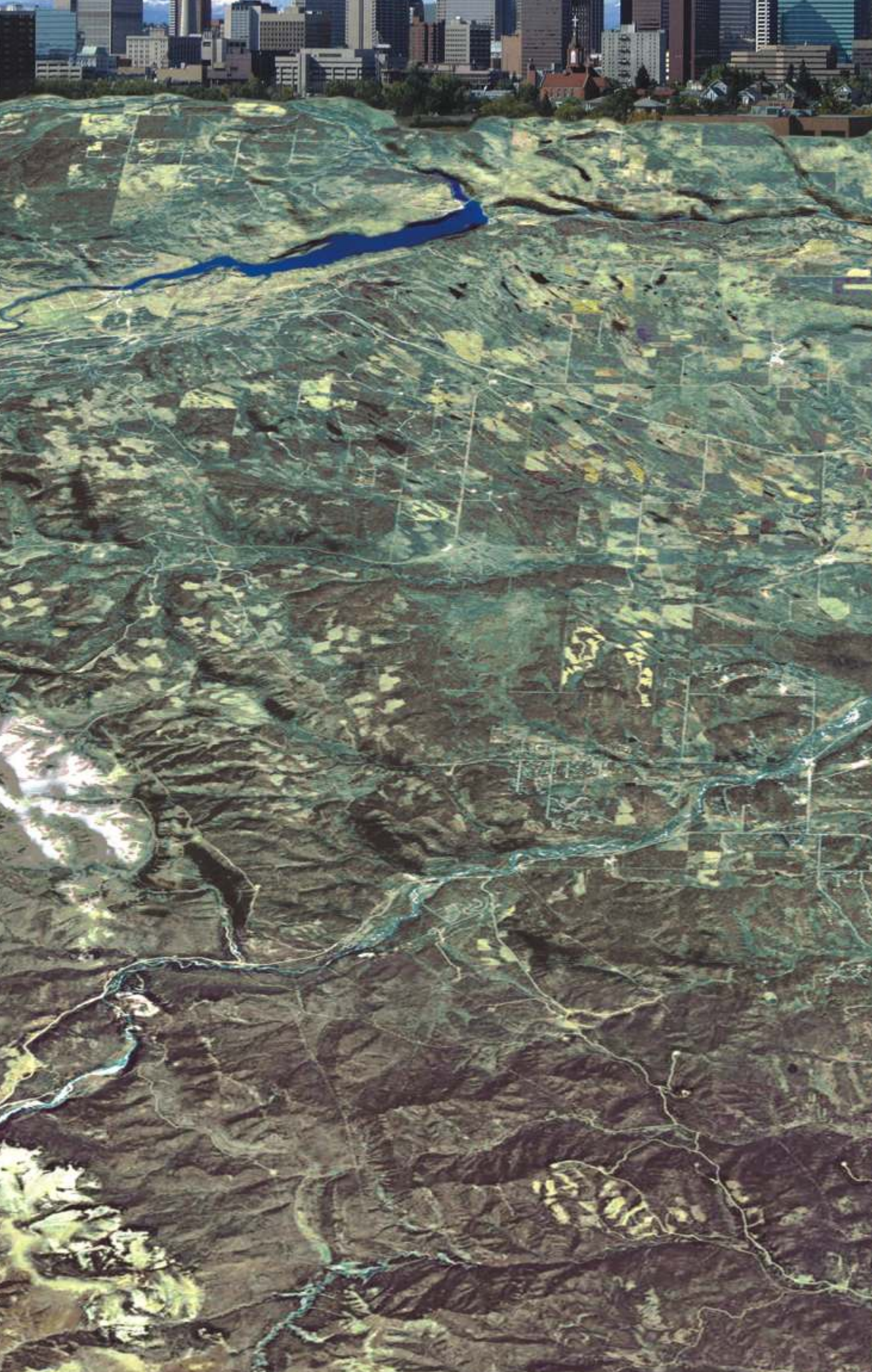
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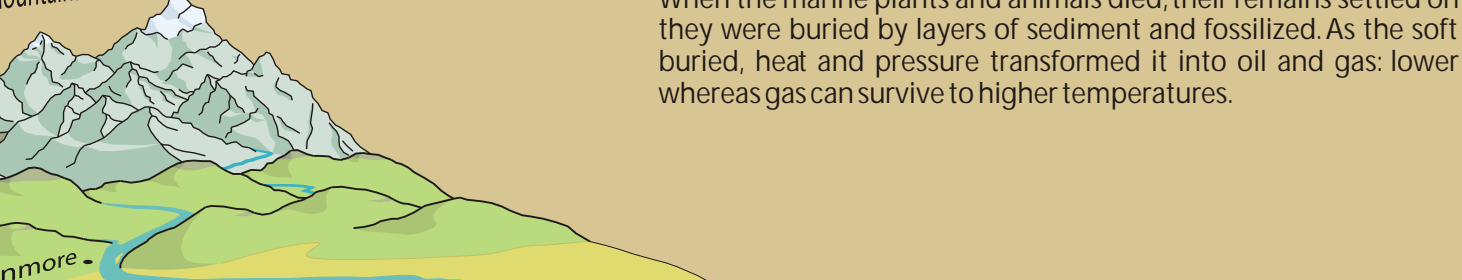
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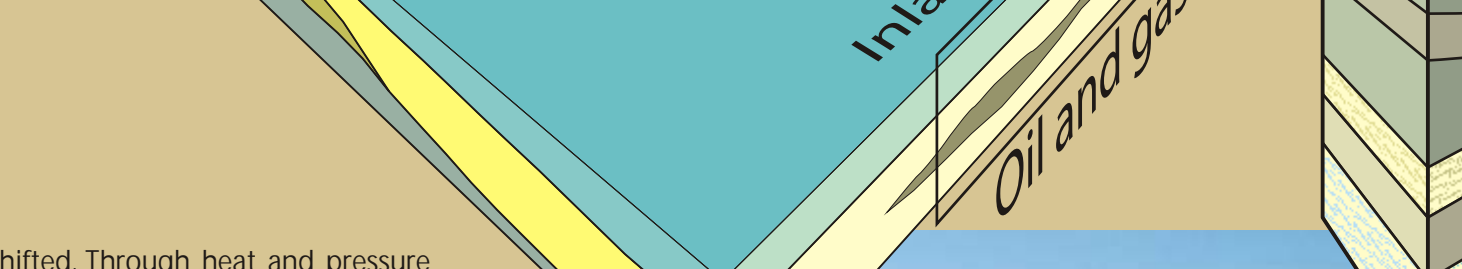
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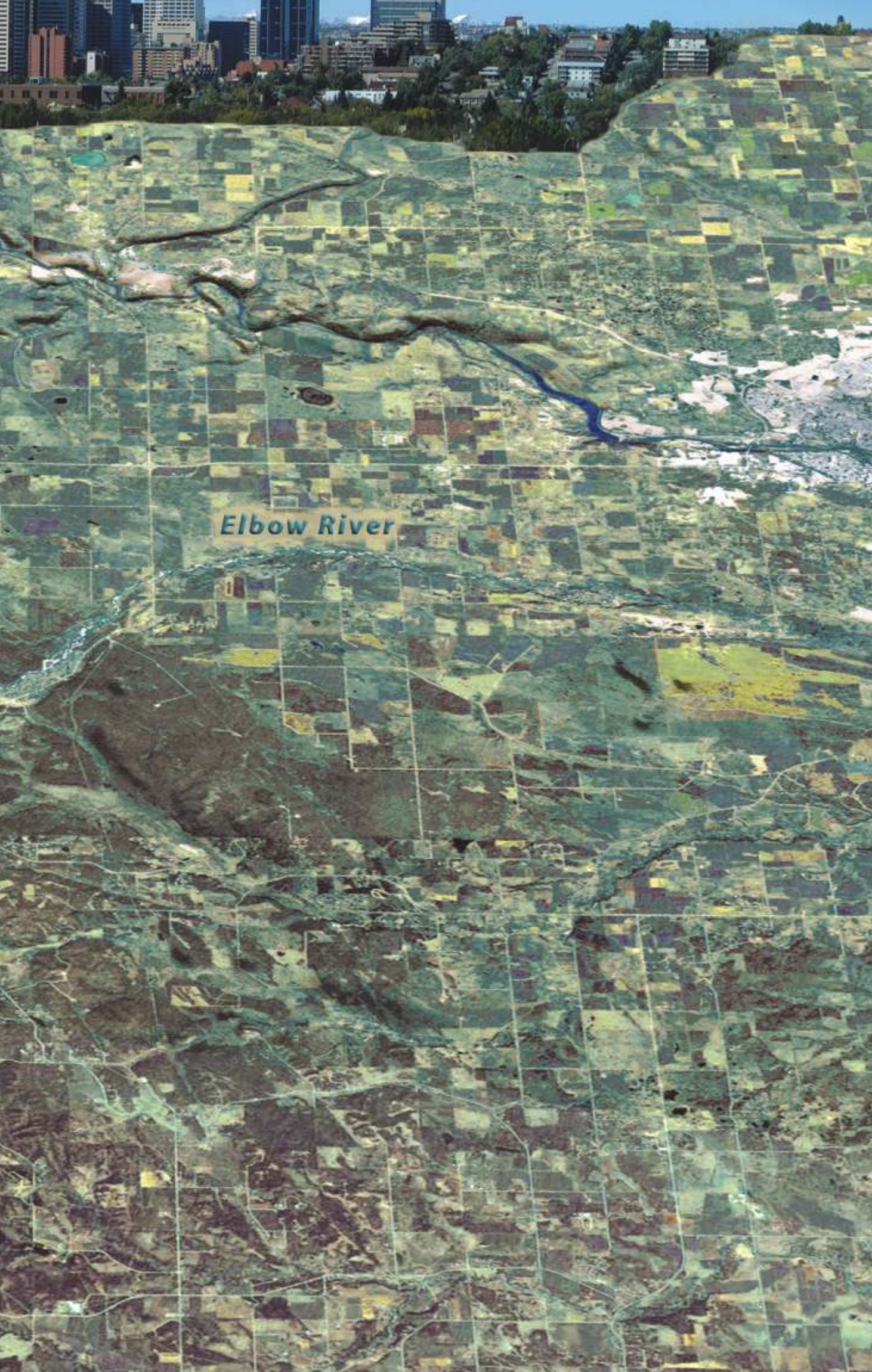
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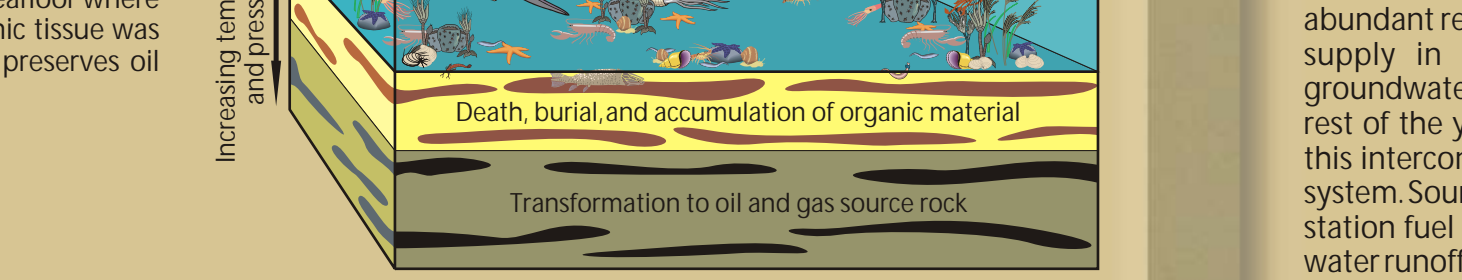
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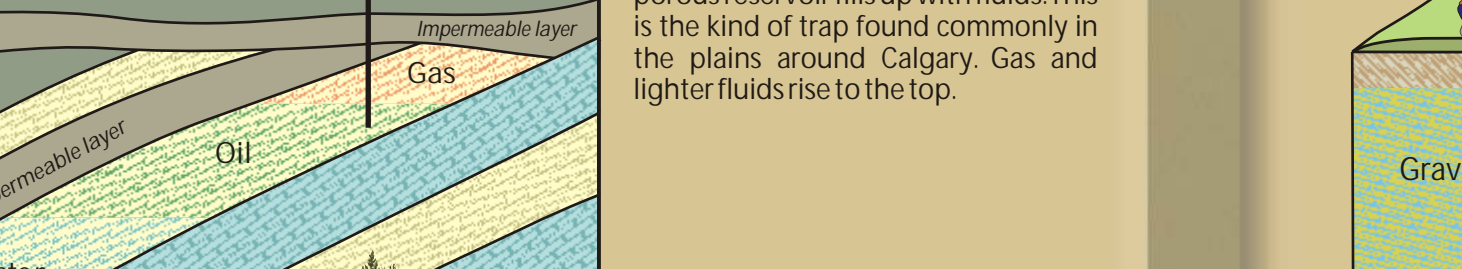
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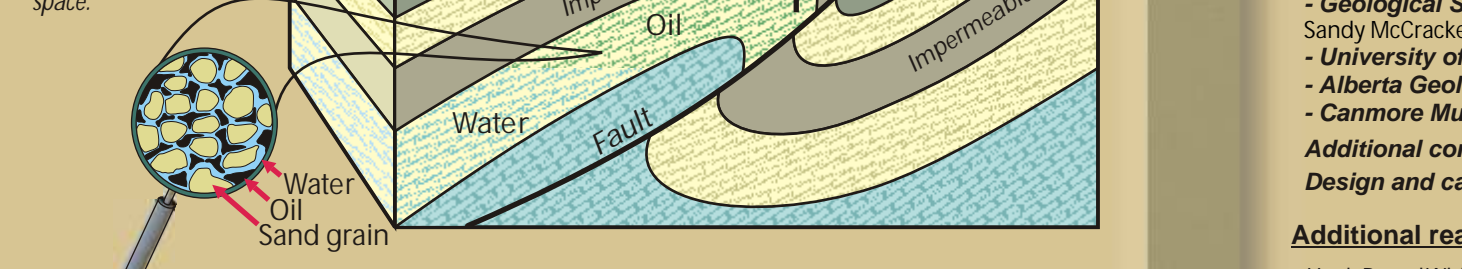
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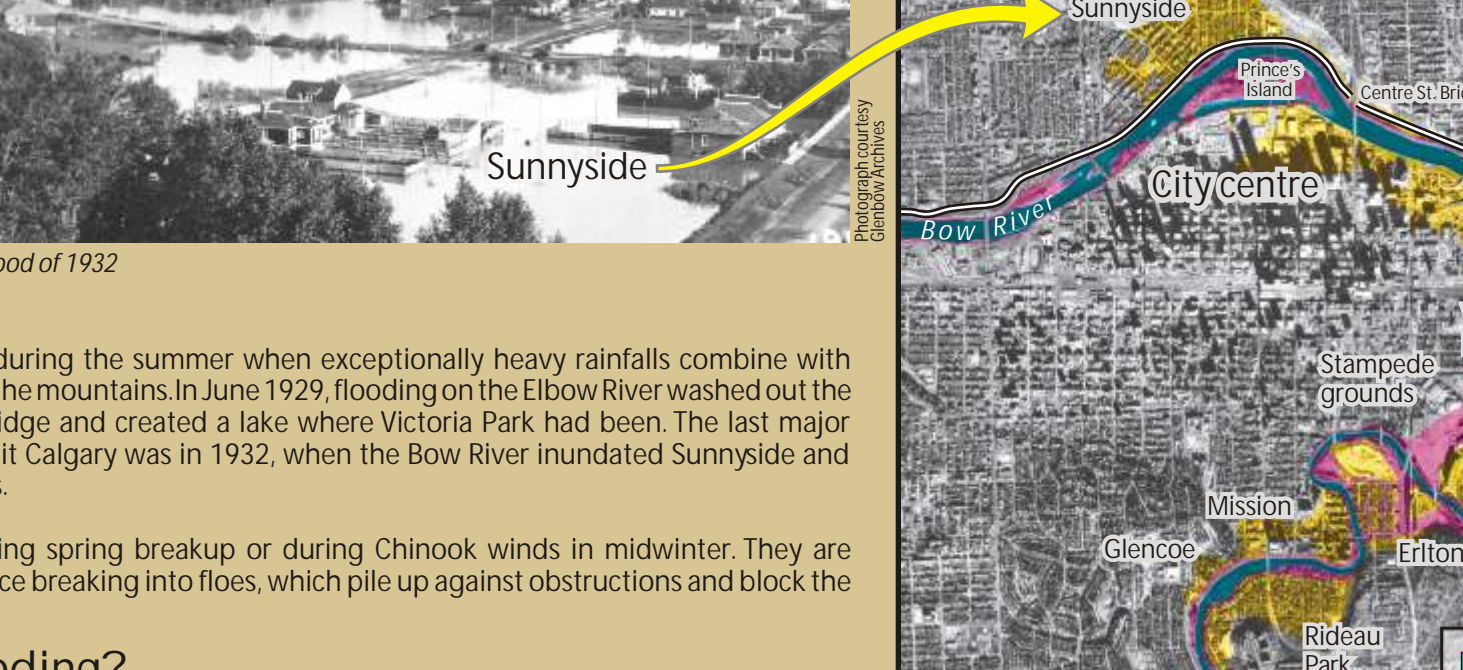
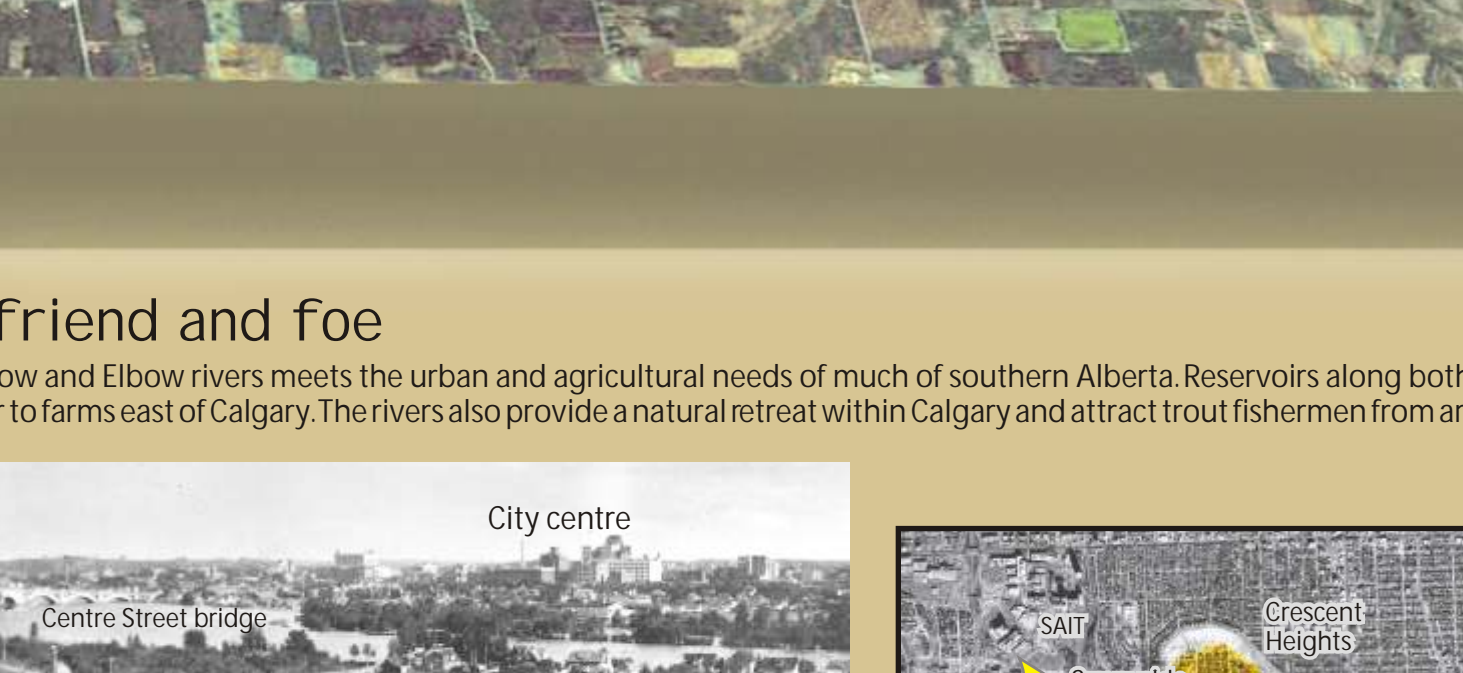
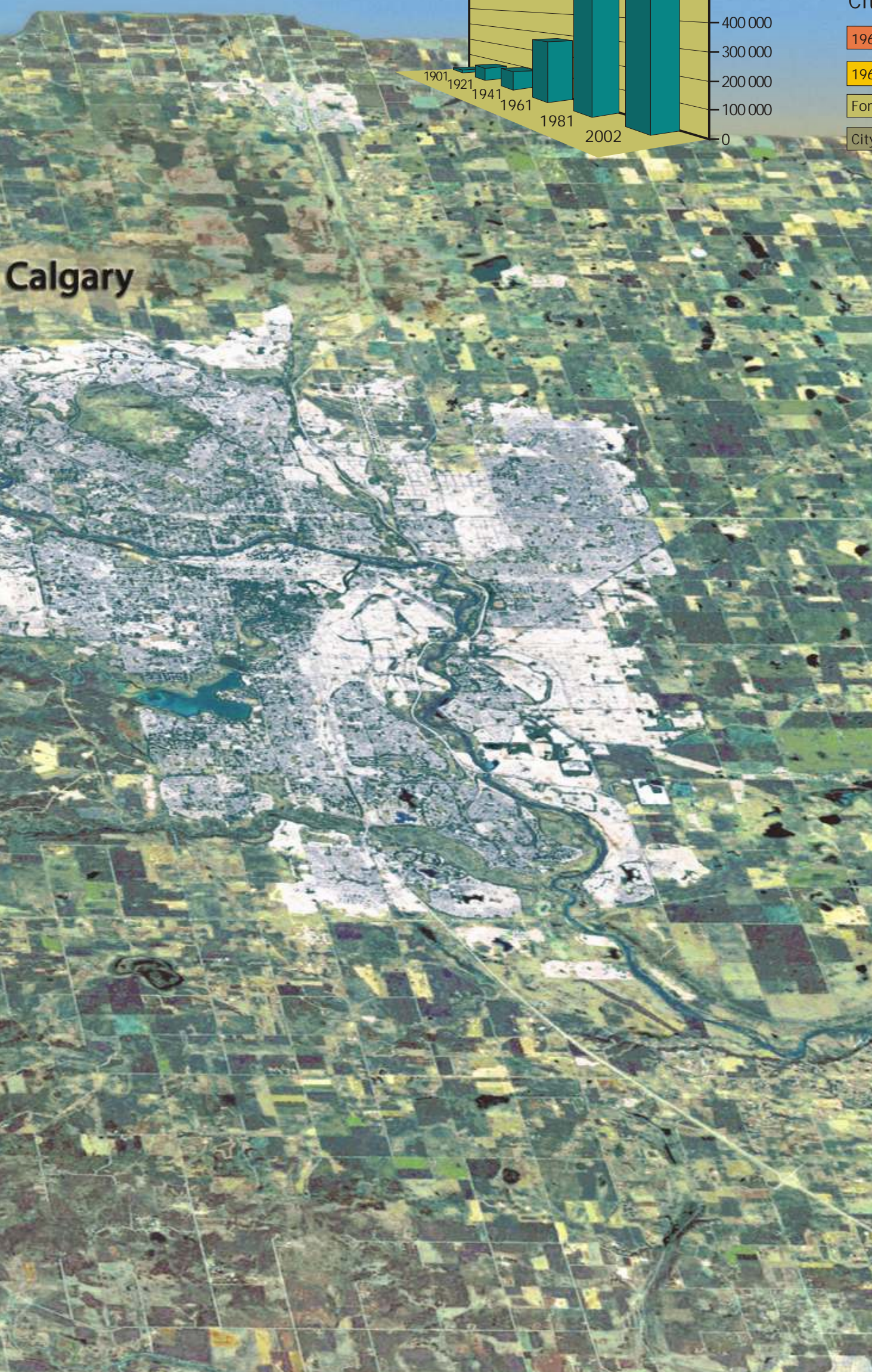
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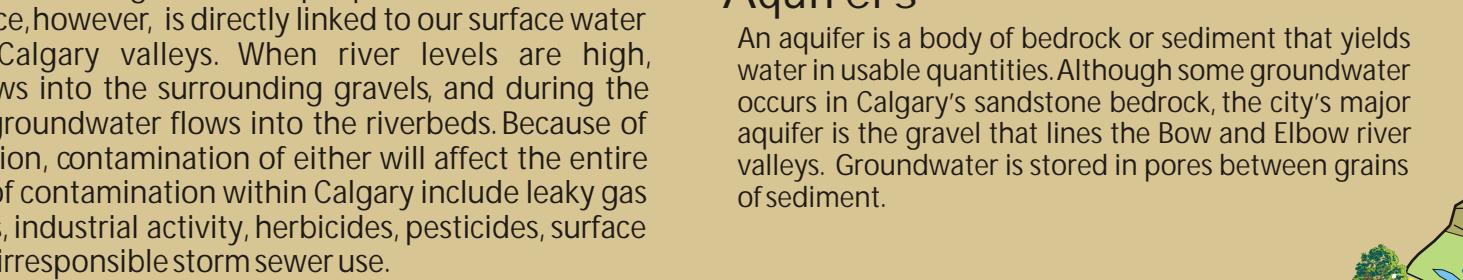
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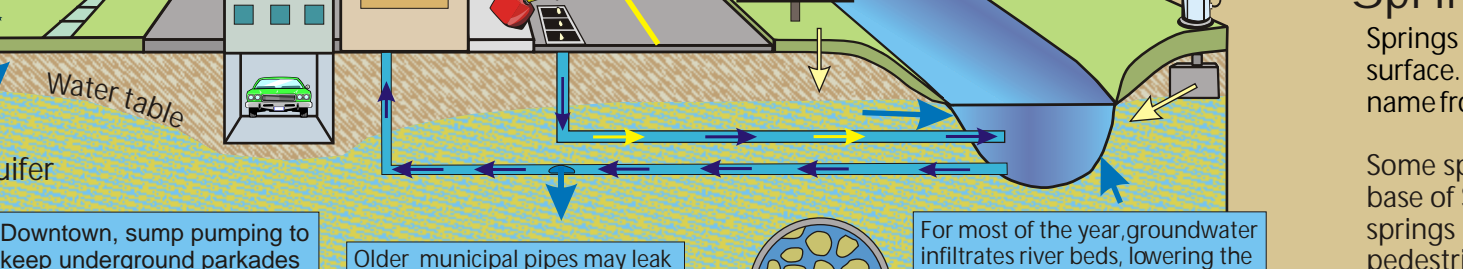
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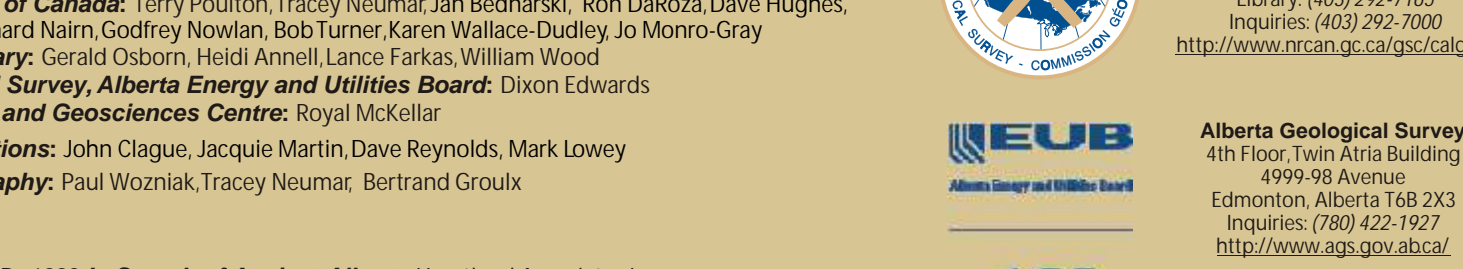
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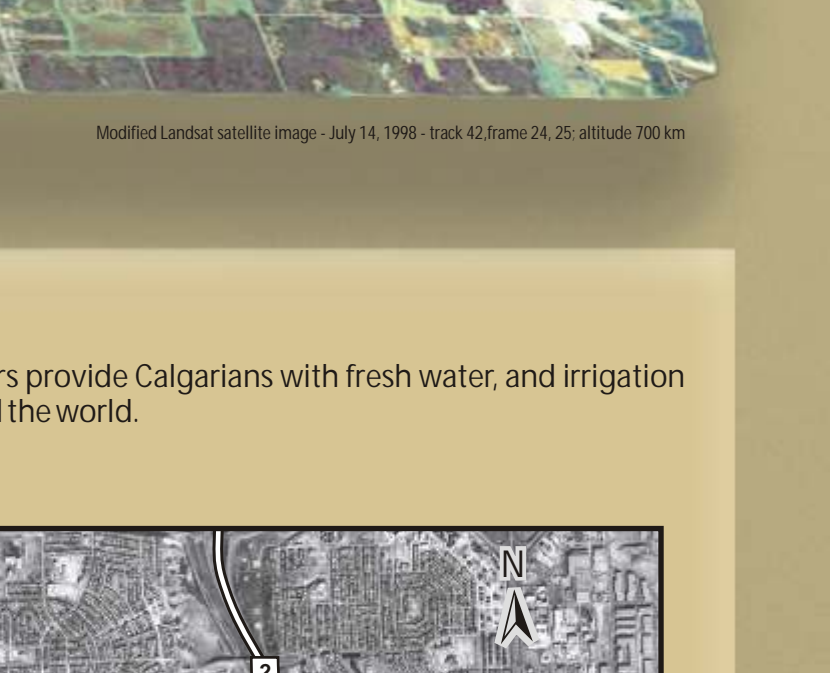
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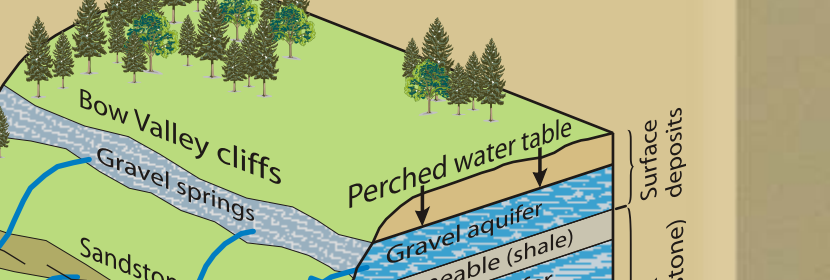
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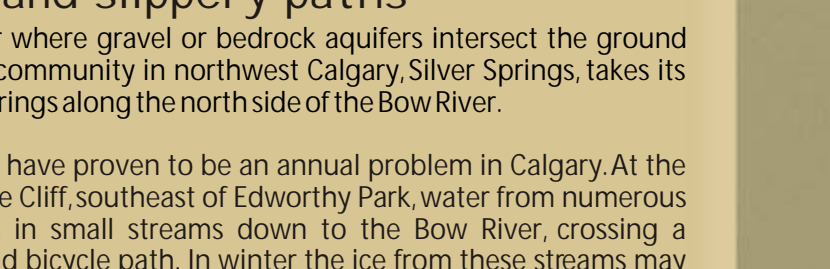
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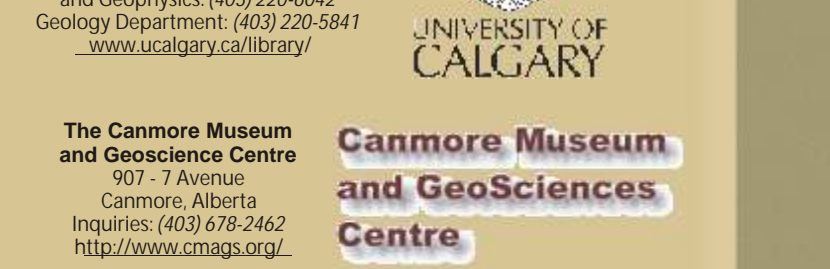
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