

Unlocking the Secrets of the Past

Geologists work much like detectives in order to work out past events. They search for clues and then piece them together in order to discover the whole picture of what happened to an area in the past.



Bedrock mappers traverse hillsides looking for rock outcrop. When they find some they examine it and record its location on a map. This will eventually become a geologic map. Geology maps show the distribution of different rock types and the location and nature of the boundaries between them. Looking for clues geologists can often determine which rock type is older, how different rocks affected each other (for example the granite-limestone boundary which forms the Whitehorse Copper Belt) and where processes, such as erosion, have affected a rock and altered it from its original state.

Paleontologists look at the fossilized remains of organisms and the evidence of their presence in an area at one time (such as the dinosaur footprints found in the Ross River area) and try to gain clues about what the environment was like at the time in order for these organisms to survive. In the Yukon researchers studying mammals who existed during the time of the last ice age have been able to shed light upon which areas of the Territory were glaciated when, and which belonged in the area known as Beringia, an area left unglaciated where plants and animals could thrive during the glacial ages.

Glaciologists and Palynologists are studying ice cores on the Mt. Logan plateau, in Kluane National Park. They have retrieved cores from the bottom of ice-caps, where the ice is as old as 20,000 years. These cores will provide them with evidence of past climate, as well as plant types from pollen grains and volcanic eruptions from windblown ash.



These kinds of scientists work to understand the past in order to make sense of the changes occurring today.

Want Information?

Yukon Geological Survey
2099 2nd Ave.
Whitehorse, YT
Y1A 1B5
Ph: (867) 667-8508
www.geology.gov.yk.ca



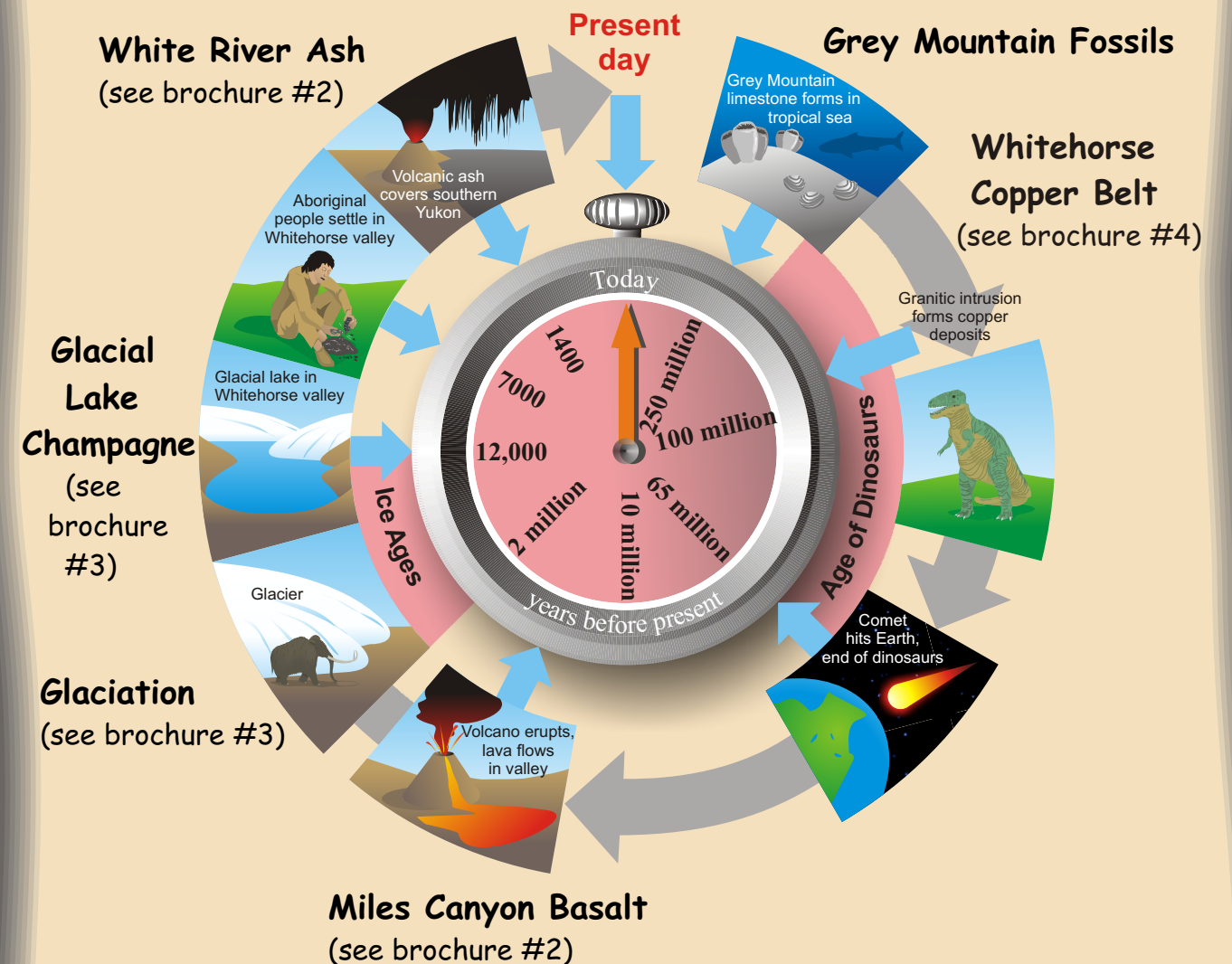
Geological Survey of Canada
101-605 Robson St.
Vancouver, BC
V6B 5J3
Ph: (604) 668-0271
www.nrcan.gc.ca/gsc



Geoscape Whitehorse

Geoscience for a Yukon community

Yukon Geo-Time



Our Landscape Through Time

The geology of the Whitehorse valley paints a picture of the last 250 million years of time. Our mountains, canyons and cliffs each have a story to tell. By combining these stories we can begin to re-tell the past.



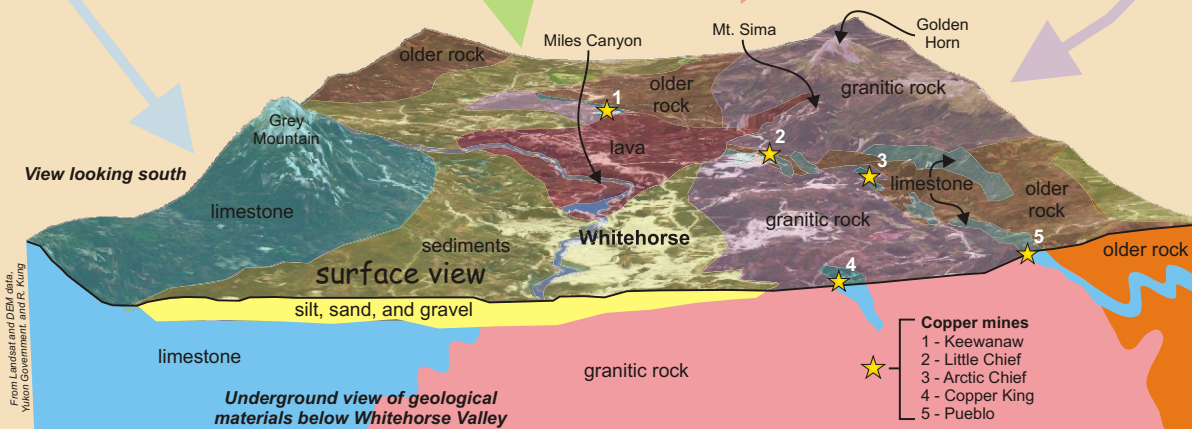
P. Long

Grey Mountain is made from limestone that was once a coral reef about 220 million years ago. Over time this coral was buried beneath kilometres of rock. The heat and pressure to which it was subjected in this environment caused its transformation into limestone. Fossilized corals can still be found in outcrop on the mountain.

Smooth-sided Golden Horn Mountain exposes granite, a rock cooled from molten magma which melted its way up through pre-existing bedrock 112 million years ago. Since then the erosion by water, wind and glaciers have exposed this rock at the surface.

Miles Canyon was cut by the Yukon River flowing over a lava flow 9 million years old. This lava first erupted from a vent below Mt. Sima. The significantly cooler temperatures of the surrounding air caused the magma to cool quickly, trapping gas bubbles within the solidifying rock.

The clay-cliffs of the Whitehorse area were deposited at the base of Glacial Lake Champagne 12,000 years ago. This sediment had been earlier ground up from the surrounding mountain-sides by passing glaciers. A white layer visible close to the top of many of these cliffs is an ash deposit erupted from Mt. Churchill, in Alaska 1200 years ago.



The Valley Beneath Our Feet



White River Ash can be found throughout the Territory in road cuts and gravel pits.

Miles Canyon Basalt can be found below the Whitehorse Rapids Fishladder

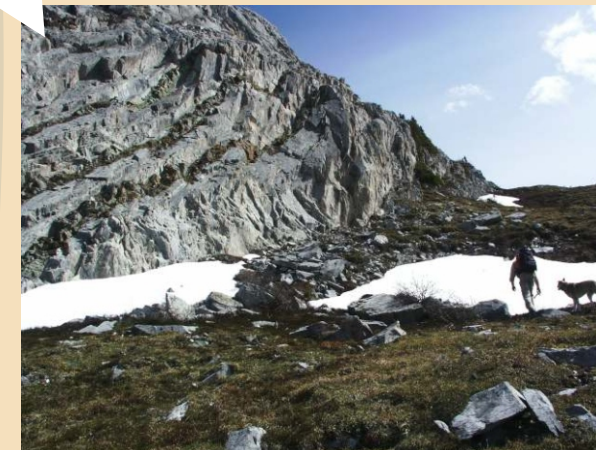


Granite can be found along the Copper Haul and Fish Lake roads and up Haeckel Hill



P. Long

Limestone can be found on the top of Grey Mountain. Fossils can be found in this limestone including brain coral.



P. Long

Glacial till deposits can be found throughout the Whitehorse area, including along the Fish Lake Road and the Copper Haul Road.

