

Finding Placer Gold

Gold was a catalyst that sparked Edmonton's evolution from a fur-trading station in 1857 into a thriving urban community by the year 1900. Anyone can walk down to the banks of the North Saskatchewan in the Capital Region River Valley Park and still pan visible gold and platinum.

The origin of the gold and platinum was somewhat of a mystery until 1987, when gold was discovered near Jasper, Alberta.

The gold was discovered in small rich veins within the Lower Cambrian strata. Further research suggests that the gold may have been eroded from this Cambrian bedrock during the early Cretaceous period, deposited with sediments, and later (during Tertiary and Quaternary time) eroded and carried east in the ancient rivers of Alberta. The gold was placed in the alluvial sediments of modern rivers during the final stage of re-erosion.

There are no major, commercial gold mining activities on Alberta's rivers today mainly due to the low concentrations of the mineral. As well, large scale placer mining operations are now prohibited by government regulations in an effort to protect drainage systems and river banks from environmental damage.

In Alberta, gold is almost always found as "placers"; tiny particles mixed with streambed deposits of sand and gravel. Deposited by both modern and ancient rivers, placers are gold and platinum flakes about 0.1 to 0.5mm in diameter and a few hundredths of a mm thick. No large nuggets are ever found in the Capital Region River Valley Park.

Gold and platinum are found as components of black sands. Black sands naturally concentrate wherever the velocity of the river is significantly reduced. This occurs, for example, where a river widens and where meanders form. Richer gold and platinum concentrations are commonly found on the insides of river bends, in pool bottoms, and at the upstream end of sand or gravel bars. As stream currents slow down, the black sand will settle out in these locations.

The placers are concentrated during floods and left stranded on the surface of these river bars. Most gold and platinum is recoverable from sluicing or panning after the spring thaw period, or after a period of flooding.

Placer gold can range from light yellow to a dull, coppery yellow. It may also be covered with a film of iron oxide, giving it a rusty colour. Pyrite or "fools gold" can be distinguished from real gold because it is brittle and crushes easily.



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Most hobby miners can be seen today on the point bar which occurs below Emily Murphy Park, just to the east of the Groat Bridge, or near Devon's River Valley West Park, and at Parkland County's Prospector's Point. Mining has also occurred in the past at "the Big Bend" and "Clover Bar".

Today's amateur prospectors are unlikely to strike it rich, but searching for gold and reliving the history of the Capital Region River Valley Park can still be fun.

A placer mining licence must be acquired before any equipment is set up. It is valid for five years, and allows a prospector to occupy any location for a maximum of 14 days at a time. Placer mining licence applications can be obtained from Alberta Energy at: <http://www.energy.gov.ab.ca> (click on "Our Business; Minerals; Permits and Leasing Tool Kits).

Sources

Edmonton Beneath Our Feet: A guide to the geology of the Edmonton region (Edmonton Geological Society; 1993)

North Saskatchewan River Guide: Mountain to Prairie a Living Landscape (North Saskatchewan Watershed Alliance/Billie Milholland; 2002)

Alberta Government (Energy) Website