



STATE OF ARIZONA

DEPARTMENT OF MINES AND MINERAL RESOURCES

Mineral Building, Fairgrounds, Phoenix, Arizona 85007 • (602) 255-3791

TYPES OF PLACER DEPOSITS

Lecture Notes

(A lecture before the Congress Council APSMOA)
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Placer gold deposits are important but not significant sources of gold in the United States.

Definition and origin of placers: Placers are formed by the concentration of gold particles from any source - often many very low grade and small lodes.

Best general conditions for formation: Deep decay of rocks followed by slight uplift as typified by the pediments surrounding the Bradshaws or the White Tanks Mtns.

Richest part of a placer: Usually rests on or near bedrock, may be just above a false bedrock formed by caliche. Values are never evenly distributed.

Other general comments: Sharp angular gold particles indicate lode source was nearby. Fine flower gold may be carried by rivers for miles. All placer gold contains some silver, but the farther the gold has traveled the purer it becomes.

TYPES OF PLACERS

Residual Placers: Very small, may have high grade. Are near source and have angular gold.

Eluvial Placers: Found on slopes below residual placers.

Stream Placers: Further subdivided into (1) Gulch Placers, (2) Creek Placers, (3) River Placers and (4) Gravel Plain Placers.

Gulch Placers - confined to minor drainages with steep gradients. Boulders are a common problem.

Creek Placers - like gulch placers but often larger.

River Placers - found in large rivers with gentle gradients of about 30 feet per mile. River placers are the type typically operated as large commercial mines.

Gravel-Plain Placers - found where rivers flatten and widen. Gold is usually fine in size and deposits may be large and low grade.

Bench Placers: Found as the remains of stream placers as abandoned stream bed segments.

Flood Gold Placers: Form as skim bars during flooding. Such placer deposits have been known to be replenished with gold each flood season.

Desert Placers: Different in most respects from all other types. Formed in washes subject to short term flash floods where proper sorting and concentration is never complete. Values are never well concentrated and are often found in layers.

Tertiary Placers: Were formed in ancient streams later buried by more recent rocks - typically volcanic flows.

Beach Placers: Formed by wave action. Might be found on ancient shorelines.

Glacial Placers: Formed by later concentration of material originally deposited unsorted by glacial action.

Eolian Placers: Formed by wind action. Concentration is never more than a few inches thick at the surface.