

From Friendly Metal Detecting Forum

<http://metaldetectingforum.com/index.php>

ABOUT COIN DEPTHS

Why are some older coins very shallow when newer coins are deep at the same sites? How can a new coin sink deeper in a few years than an old one in over 80 years?

The Density of Soil

The density of inorganic soil is from 2.6 to 2.8 and any object of greater density, including coins, would eventually sink until the density of the soil equaled the density of the object.

The Sink Rate

The sink rate is determined by the difference in density, the greater the density the faster the sink rate. Contributing factors are vibration, rain, frozen soil, grass buildup, leaves and a few others.

How often the ground gets saturated can be a much bigger driver of coin depth than any minor differences in soil density. Until the ground directly beneath the coin becomes saturated to the point where the dirt becomes suspended in the water, and can move to the sides of the coin due to the coin weight, then little depth due to sinking can occur.

That's why many coins seem to end up in the 6-8 inch range - it takes a real soaker to move them deeper. So maybe the discrepancies in coin depth can be attributed to minor differences in the local drainage. The finer the soil particles, the easier they get suspended and the faster the sink rate.

Chart of Densities

Here is a chart of the densities of some of the common metals we find with metal detectors, also the differences in the density of different metals and a major difference between most of them and soil.

Looking at the chart below, the dime should sink a lot farther than the penny, because the gravity is twice as high on silver as copper is? I know I've found silver just under the grass and then dug 6" or 7" for a clad penny. Nothing worse than getting a deep signal, dig it and it's a clad penny!

The good stuff is sinking faster than the trash. No wonder not many gold coins are being found!

Density of Precious Metals

Platinum 21.45

Gold 19.3

Silver 10.5

Copper 9.0

Densities of Some Common Metals

Aluminum 2.7

Lead 11.4

Magnesium 1.8

Steel 7.8

Tin 7.3

Zinc 7.1

Iron 7.87