Metal detecting and highly conductive soil

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Metal detectors detect a metal target through a signal (electricity) passed into the ground.
Highly conductive soil presents some challenges, and can be compensated for with proper ground balancing, the mineral control, lowering sensitivity or switching to a lower frequency search coil.
Highly conductive soil refers to soil with relatively low electrical resistance, this allows electricity to pass through the soil more easily. The conductivity of soil is determined by its ability to allow the flow of electric current.

The following factors determines the amount of conductivity:

Temperature

When temperatures are high, the ability of ions to move in the soil increases, resulting in warmer soil being more conductive.

pH Levels

The acid or alkaline level of soil is another factor that may influence conductivity.
Soil with a lower pH (acidic) may contain a larger concentration of hydrogen ions, making it more conductive.

Moisture Content

Water in soil contains charged particles called ions, which increases the ease of movement of electrical current. Wet soil conducts electricity better than dry soil.

Dissolved Salts

Dissolved salts such as sodium chloride are ions which contribute to soil conductivity. In example, this can be observed near the seacoast where the saline content of the soil is high.

Soil Composition

Sandy and rocky terrains have lower conductivity than soil rich in organic material or clay which is more dense and often contains minerals which contributes to ion exchange.

Conclusion

Though some challenges may be presented in different scenarios while metal detecting on highly conductive soil, the Nexus induction balance metal detector provides ways to properly compensate and successfully retrieve deep metal targets.