

Conductivity as a proxy for total dissolved solids

Conductivity is commonly used to characterize natural waters. For many workers, conductivity provides a sense of the concentration of total dissolved solids (TDS) in the solution. Conductivity is convenient because it can be measured quickly with an electrode, whereas determination of TDS requires more effort and expense.

The plot below shows the relationship between conductivity and TDS in some natural waters in Georgia. The general correlation shows why conductivity is useful, but the scatter within the correlation shows why conductivity only provides an estimate of TDS. For example, the upper left inset shows that a conductivity of 280 $\mu\text{S}/\text{cm}$ might represent solutions with TDS ranging from 125 to 245 mg/L.

