



Monitoring pH

pH is a measurement of acidity or alkalinity and affects many chemical and biological processes in a water body. pH measures the hydrogen ions within a solution. The pH scale ranges from 0 – 14 and determines whether a solution is acidic or basic. When monitoring for pH, a reading between 0 – 6 is considered acidic and a reading within the range of 9 – 14 is basic. Most aquatic organisms prefer a neutral pH range of 6.5 – 8.5. Changes in pH can be caused by a variety of factors, including: acid rain, mining activities, and wastewater discharges.



Using pH Test Strips during the 2006 CWA 106 work shop in Prescott, AZ.

Understanding the pH scale: High pH can mean a reduction of the diversity within a stream due to stress on the physiological systems of most aquatic organisms and a reduction in reproduction. Low pH can cause toxic conditions for aquatic life by allowing toxic elements and compounds to become mobile. When monitoring water quality, it would be beneficial to know what aquatic life exists within the water body of interest and the pH that is preferred by those organisms. Also, it would be helpful to compare data results to the tribal, state, or federal standards.



The Multi-Parameter Sonde shown in the above photograph can be used to collect pH data

Monitoring Equipment: There are a variety of monitoring devices available to measure pH. Depending upon monitoring objectives set forth in an environmental program, the following equipment options are commonly used to collect pH data from the field.

Readily available and economically priced:

- pH Test Strips
- pH Kits

Greater precision and higher cost:

- pH Meters
- pH Probes (multi-parameter sondes)
- Contract Laboratories (if necessary)

For additional information:

www.epa.gov/owow/monitoring/volunteer/stream