

Soil pH Protocol

Purpose

To measure soil pH

Frequency

Once for each horizon

Three samples for each horizon

Materials and Tools

- pH Data Work Sheet
- Three 100 mL-beakers
- Balance
- pH paper, pen, or meter
- Glass stirrer or spoon
- Distilled water
- 100 mL-graduated cylinder to measure distilled water

For Disposing of Soil:

- Buckets or other large water tight containers

Preparation

Calibration of pH meter or pen

How to Measure pH

Make this measurement on three samples for each horizon.

Mix Soil and Distilled Water

1. Calibrate the pH pen or meter with the buffer solutions of known pH following the procedure outlined in the *Hydrology Investigation* for Calibration.
2. In cup or beaker, mix dried and sieved soil with distilled water in a 1:1 soil to water ratio (e.g. mix 20 g of soil with 20 mL of water, mix 50 g of soil with 50 mL of water). Use a spoon or other utensil but not your hands to transfer the soil. Oils and other materials on your hands may contaminate the pH reading. Stir with a spoon or other stirrer until the soil and water are thoroughly mixed.
3. Stir the soil-water mixture every 3 minutes for 15 minutes. After 15 minutes, allow the mixture to settle until a supernatant forms (about 5 minutes).
4. In a cup or beaker, measure the pH of the water you are using for this protocol by placing the pH pen or meter into the water and reading the value indicated.
5. To measure the soil pH, place the electrode of the pH pen or meter into the supernatant.
6. Record your results on the Soil pH Data Work Sheet.

