

# Calibration of Soil Moisture Sensors

## Field Guide

### Task

To calibrate the soil moisture sensors.

### What You Need

- Soil Auger
- Meter stick
- Properly installed soil moisture sensors
- Soil moisture meter
- Materials for the [Gravimetric Soil Moisture Protocol](#) (i.e., cans or sealable bags, drying oven or heating lamps, trowel, marking pen)
- Pen or pencil

### In the Field

1. Take readings from the soil moisture sensors following the process outlined in the Reading the *Soil Moisture Meter Field Guide*. Record this reading on the Daily Soil Moisture Sensor Data Sheet.
2. Select a random location within 5 m of the sensor holes.
3. Select a random location within 5 m of the sensor holes.
4. Clear away any surface debris.
5. Use the auger to collect samples for the *Gravimetric Soil Moisture Protocol* from each depth for which you are developing a calibration curve. Place each soil sample in a container and note the site and the depth on the container.
6. Backfill the hole (last out, first in) and replace the surface cover.
7. Record the date, time, depth(s) and container number(s) in your science notebook.
8. Determine the soil water content of each sample following the *Gravimetric Soil Moisture Protocol Lab Guide*.
9. Record the date and time of your measurement, the wet, dry, and container masses in your science notebook. Calculate the water mass, dry soil mass and soil water content and record their values.
10. Report the gravimetric soil moisture data to GLOBE.
11. Repeat steps 2 – 10 about fourteen times as the soil moves through one or two complete drying cycles. Wait until your meter reading changes significantly before collecting another gravimetric sample.