Standard Herbaceous Measurements - Student Field Guide

Herbaceous Sampling Team - 2-3 people

Task

Collect samples of herbaceous vegetation from the Carbon Cycle site.

Materials

- ❑ Small beanbag
- ❑ Blindfold
- ❑ Measuring tape
- ❑ Grass clippers or strong scissors
- ❑ Small brown paper bags
- ❑ Pen or marker

Procedure

1. Blindfold one member of your group and have him or her throw a beanbag somewhere in the site.
2. Mark a one-meter square around the beanbag to take a random sample.
3. Using the grass clippers, clip all the vegetation close to the ground within that square. Do not collect any leaves or litter that are already unattached from the ground.
4. Place clippings into a (or several) brown paper bag(s). All “standing” plants, both green and brown can be bagged together.
5. Label the bag(s) with the **site name, date, and sample number** (e.g., Field Site, Herb Sample #1, Bag1 of 2).
6. Repeat steps 1-5 two more times.

Herbaceous Vegetation Lab Protocol and Data Sheet

Herbaceous Measurement Team - 2 people

Task

Measure herbaceous biomass from the Carbon Cycle Sample site.

Materials

- ❑ Balance
- ❑ Pen or marker

Procedure

1. Set up the herbaceous samples to dry.

   a) Drying Oven: Check the temperature of the drying oven, it should read between 50 and 70 degrees Celsius. Put the labeled bags in the drying oven.

   b) Air Drying: Select a dry secluded area large enough for all of your sample bags. Open the tops of the paper bags for maximum airflow.

2. Use a balance to mass (g) each bag once a day after day 1 if using oven, and once a day after day 5 if air drying. When the mass is the same two days in a row, the samples are completely dry. Design your own data sheet to keep track.

3. Record the mass of each bag and its contents on the *Herbaceous Biomass Data Sheet*, following the sample below.

4. Shake out the contents of each bag and weigh the empty bag. Record the mass, being careful to keep the bags containing the same samples grouped together (i.e. Sample #1, Bag 1 of 2 and Bag 2 of 2). Repeat this step for each bag and sample.

5. Use the *Herbaceous Biomass Data Sheet* and provided equations to calculate the site's average herbaceous biomass (g/m^2) and carbon stock (gC/m^2).

Herbaceous Biomass = Mass of Sample and Bag – Mass of Empty Bag

Herbaceous Biomass Measurements (SAMPLE DATA TABLE)

Sample Number	Mass of Sample and Bag (g)	Mass of Empty Bag (g)	Herbaceous Biomass (g/m^2)
Field, Herb #1	Bag 1 of 2 1000g	200g	800g
Field, Herb #1	Bag 2 of 2 300g	198g	102g
Field, Herb #1			902g
Field, Herb #2	Bag 1 of 1 1100g	201g	899g
Field, Herb #3	Bag 1 of 1 1064g	200g	864g