

How Much Does a Prairie Weigh?: Plant Biomass above Ground

Note: The following research idea has not been fully developed into an activity but has been tried in some workshops and classrooms. If you try it, let us know how it went by sending a note to eps@uwarboretum.org

Measuring the Prairie

Research Question: How much does the above-ground vegetation of a prairie weigh? By weight, are there more grasses or more forbs?

Equipment:

- 4 wooden sticks
- Clippers
- Large paper bags
- Work gloves
- White sheet
- Permanent marker

Instructions:

At a random location in the prairie, place the four sticks at ground level to form a square of area 0.4 square meters. Clip off all vegetation that is rooted within that square, clipping as close as possible to ground level. Carefully place all the clipped vegetation in the white sheet for transporting.

Go back to the outdoor lab area, and spread the sheet on the ground. Label one large paper bag "Grasses" and another large paper bag "Forbs." Separate the grasses from the forbs, and place each in the corresponding bag. Clip plants into smaller pieces so that they will fit into the bags. Use additional bags as needed (don't forget to label them!).

Next, weigh each of the bags of vegetation, and record the weights on the data sheets (these are called "wet weights"). Which weighs more, grasses or forbs? How much more? Do you think plant weight is a good measure of dominance of one plant type over another? Do you think we would get the same result if we dried the vegetation thoroughly and then weighed it?

Save the bags of vegetation for drying and re-weighing.