Point Sampling
Exercise 9

In this exercise we will collect point data which can be used to calculate total canopy coverage and species composition. You have already used a point method in sampling synthetic communities on paper and our field method is very similar. We will use point frames that have grooves that guide 10 pins with sharpened points (Figure 1).

Figure 1. This is a typical 10 point frame used for measuring range herbaceous vegetation. This frame holds 10 pins with very sharp points and can be aligned at various angles from vertical. The aggregate number of "hits" on bare ground, litter or vegetation for the 10 pins represents 1 sample.

The point frame may be inclined at various angles by adjusting the chain that holds the foot in place. Various studies use different intersection angles with the ground from vertical, 60°, 45°, or lower based on what type of information is being collected. In our lab we will use 45° and collect both cover and species composition. We are going to record only the first hit of the pin as: 1) perennial grass, 2) annual grass, 3) annual forb, 4) perennial forb, 5) litter, and 6) bare soil or rock. Some researchers contend that it is impossible to record more than 1 hit because the error among readers is so great on second and third hits that the data is worthless. There are also issues with this technique when the wind is blowing and vegetation is moving which is quite common. Pins should be sharp so there in little confusion as to whether the tip of the needle touches or misses a leaf or object.

Assignment

Today each group will sample 10 randomly located point frames (100 points), share the data with other groups, and determine the following:

1. Plant Canopy Cover (mean and standard deviation) _____
2. Species composition of the following groups:
    a. annual grass   _____
    b. perennial grass   _____
    c. annual forb   _____
    d. perennial forb   _____
    e. litter   _____
    f. bare soil/rock   _____

Questions

1. What other methods could be used to estimate total canopy coverage and species composition?
2. What are the benefits of point sampling over the other methods?
3. Could you increase accuracy or precision by having a point frame with 20 pins vs. 5 or 10 pins?
4. If you could choose between using a single pin at each sample point, or a frame with 10 pins which would you choose and why?

Name: _____ Date: _____

Location: _____ Site: _____

Sample	Ann. Grass	Per. Grass	Ann. Forb	Per. Forb	Moss	Litter	Bare Ground
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
Total							
% Species							