Quadrat Sampling at Home

Today, we will be comparing the population density of weeds (weeds per square meter) growing in two different lawns. This gives you a chance to use the same field techniques that Dr. Nash & Dr. Mueller use.

1. Which two areas are you going to sample? Which one do you think will have fewer weeds? Why?

You will need a transect tape (If you have a measuring tape or transect tape, this will work best. But any string/rope/jumprope will work.) You will also need a quadrat. If you do not have one, a hula hoop, empty picture frame, empty Amazon box, or any square or rectangle of known area will work.

Measure the length of the sides of your quadrat in centimeters: _____ X _____.

Now, divide these numbers by 100 to get the length in meters: _____ X _____.

Multiply these numbers together to get the area. Area: _____ m^2

Follow the procedure to sample the number of organisms in your first location. Record your data in the data table.

- ☐ Lay your transect tape on your first lawn. The direction doesn't matter, but make sure you avoid sidewalks, flower gardens, or other similar areas. You only want to sample the lawn.
- ☐ Start at one end of the transect. Toss your quadrat gently to the left. Count all the weeds in the quadrat.
- ☐ Pick up your quadrat and take a few steps along the transect tape (about ⅓ of the way along the tape). Toss your quadrat gently to the right.
- ☐ Repeat this three more times, alternating what side of the tape you are sampling on.
- ☐ When you finish counting your five quadrats, estimate the area of the lawn you are sampling.
- ☐ Repeat this process in the second lawn.

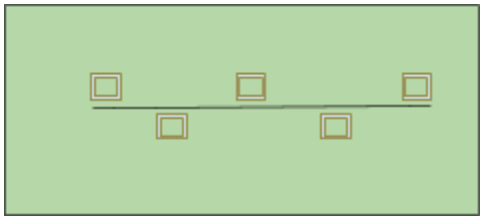

Figure 1: Left- A quadrat made of an empty Amazon box deployed in a lawn. Right- A diagram of a lawn with the transect (line) and the five locations sampled with quadrats.

Data Table

Write the name of the locations you are sampling at the top of your table. Record the number of weeds you count in each quadrat #.

When you have finished your five quadrats, find the average number of weeds per quadrat for both areas. {Add up the number of weeds in each quadrat and divide the total by five.} Write this where it says "Average # of weeds per quadrat".

Divide the average # of weeds per quadrat by the area of the quadrat in square meters (you calculated this on the first page). Write your answers where it says "Average # of weeds per square meter"

Location		
Quadrat #1		
Quadrat #2		
Quadrat #3		
Quadrat #4		
Quadrat #5		
Average # of weeds per quadrat		
Average # of weeds per square meter		

2. How accurate do you feel this estimate of population density was? Suggest two things you could have done differently to come up with a better estimate.

3. *Make a bar graph comparing the average number of weeds per square meter. Be sure to label the axes, give units, and give the graph a title.*

You can either choose to click on the grid below, click edit, and draw the graph yourself OR you can make one in Google Sheets and copy and paste it here.