Biodiversity Practical

Part 1 – Investigating the population size of a plant species using random sampling.

Aim:

Method:

1. Mark out a known area in a field (e.g. 20 m by 20 m) and calculate the total area
2. Select 10 different sets of random coordinates (e.g. using random number generator)
3. Place a quadrat at the first set of coordinates
4. Count the number of organisms (e.g. the number of daisies) within the quadrat
5. Repeat by placing the quadrat at the other random coordinates
6. Use your measurements to calculate a mean number of organisms per quadrat
7. Calculate the area you have sampled by multiplying the area of the quadrats by the number of samples used
8. Estimate the size of the population using:

$$\text{Estimated population size} = \frac{\text{(total area)}}{\text{area sampled}} \times \text{mean number of organisms per quadrat}$$

Results:

Part 2 – Investigating the effect of a factor on plant distribution using systematic sampling.

Aim:

Hypothesis:

Method:

1. Lay out a tape measure on over a clear 10 m of the field
2. Place the quadrat on the ground at the 0 metres mark
3. Count the number of organisms in the quadrat
4. Move 2 m further along the measuring tape and repeat the process (using quadrats at regular intervals of 2 m) until you reach 10 m

Note: If light intensity is the factor being investigated, a light meter can be used to measure the light intensity at each interval.

Results: