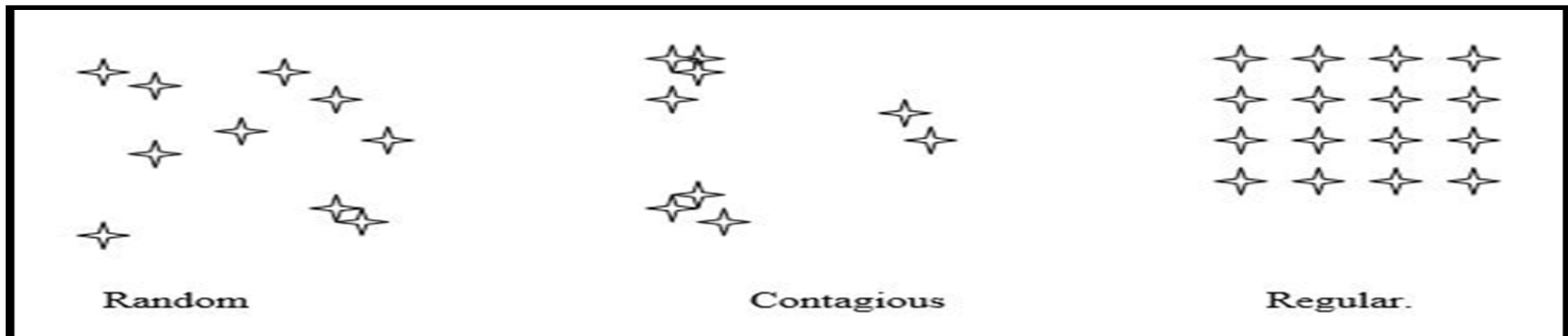# ECOLOGY LAB 9

Mohamed Sabbar

Density and dispersion patterns:

- As noted earlier, the number of individuals per unit area is termed the **density**. **Dispersion** is the pattern of the distribution of organisms in space. There are three basic dispersion: random, regular and clumped (or **contagious**).


Random   Contagious   Regular.

Density and dispersion patterns:

- A random dispersion pattern means that there is an equal probability of an individual occurring at any point in the habitat and that the presence of an individual does not influence the probability of occurrence of another individual. Contagious dispersion patterns are those where the presence of an individual increases the probability of finding another one nearby. Regular dispersion, indicated by more even spacing that would be predicted by a random dispersion may suggest territoriality or some limiting resource. What pattern do you think is most common in nature?
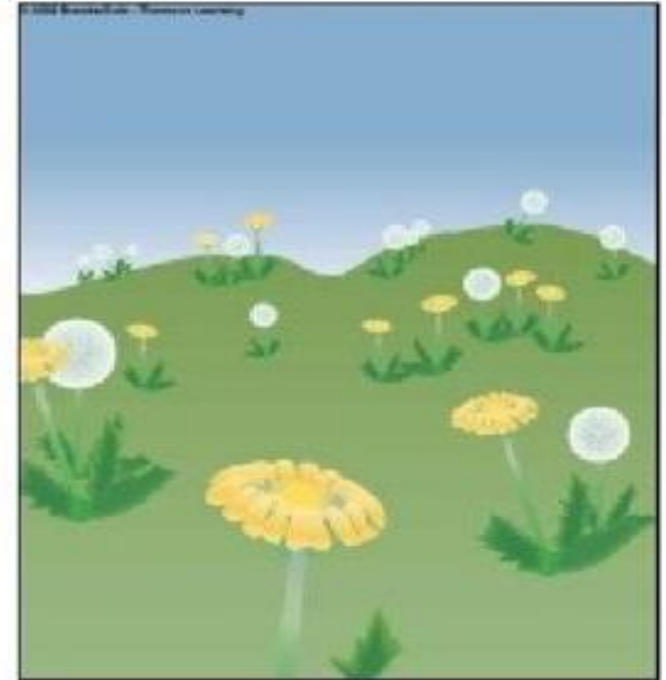
Population Dispersion Patterns
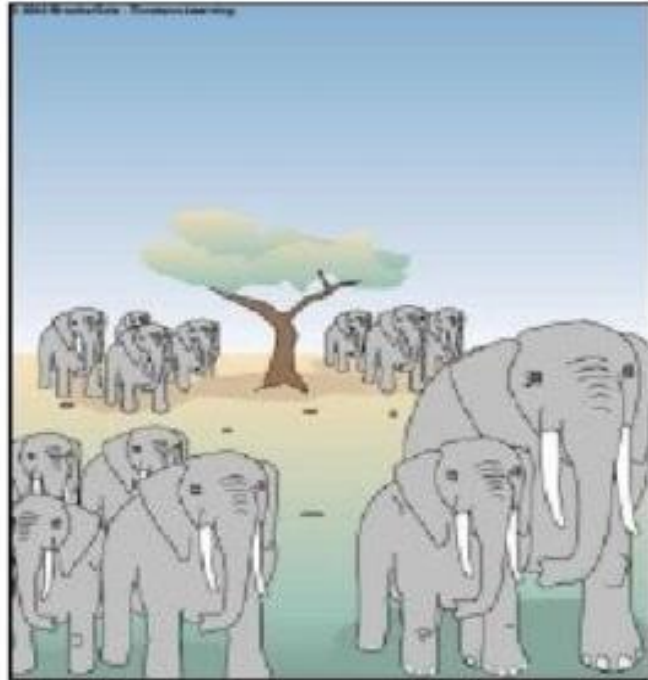
Clumped
(elephants)
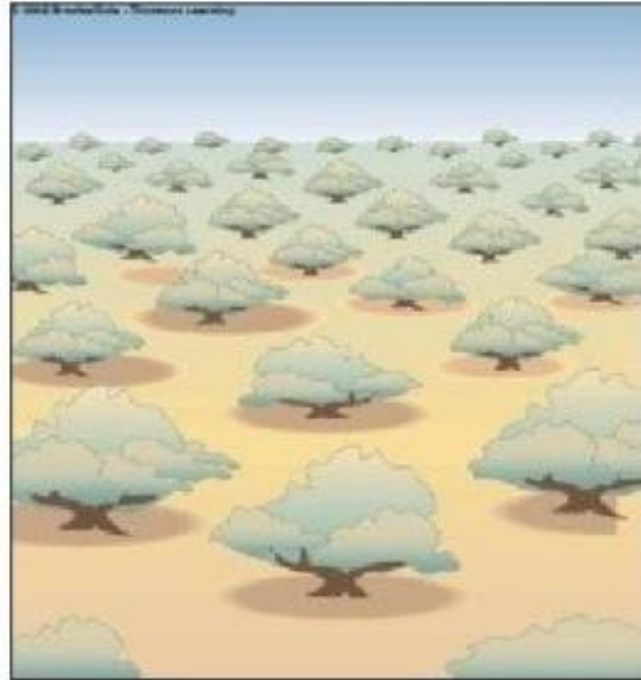
Uniform
(creosote bush)

Random
(dandelions)

Sample Size:

- Hopefully, by now the question of sample size has already occurred to you. How many samples (of any kind) will you need to take before you are confident (how confident?) that your estimate of density or dispersal reflects the true situation? Clearly, the larger the sample the better, but things like time, manpower and money also enter the picture.

Sample Size:

- . How can you determine the appropriate sample size? There are many methods some simple and some complex. One easy method is graphical and should be done while you are in the process of sampling. The method consists of plotting a running mean. The X-axis is the number of samples (1, 2, 3, etc.) and the Y-axis is the mean number of individuals per sample (a cumulative value averaged over the continuously increasing number of samples you have taken.) As the number of samples increase (as you move to the right along the X-axis) the running mean should begin to stabilize.