

Sampling Review:

Static Populations-

Do not move

These populations will be sampled with quadrat sampling.

Estimated Population = (ave. specimen per quadrat) (total number of quadrats in the plot)

Example:

You sample trees in an area that is gridded off into 30 quadrats. You sample in three of the quadrats. In quadrat 1, there are 12 Trees. In quadrat 2, there are 22 Trees. In quadrat 3, there are 18 Trees. Determine the estimated population.

First you must find the ave. per quadrat:

Ave/quad = total organisms counted/ number of quadrats counted in

Ave/quad = 52 Trees/3 quad

ave/quad = 17.333 trees/quad

Then plug the information into the estimated population formula:

Estimated Population = (ave. specimen per quadrat) (total number of quadrats in the plot)

Estimated Population = (17.333 trees/quad) (30 quad)

Estimated Population = 520 Trees

Motile Populations-

Have various modes of locomotion

These populations will be sampled with the Lincoln Index (Mark and Recapture method)

Estimated Population = original number captured and marked (number recaptured on subsequent captures /number recaptured previously marked)

Or

$N = M(n/R)$

Example:

You sample wolves in a park. You originally capture, mark, and release 57 wolves. The following week, you set traps and capture 12 wolves in trap 1 and one had been previously marked. In trap 2 you capture 8 wolves and 4 had previously been marked. In trap 3 you capture 15 wolves and 6 had previously been marked. In trap 4 you capture 6 wolves and 1 had previously been marked. What is the estimated population of wolves in the park?

First add up all your subsequent capture data.

Total recaptured (add all trap data): 41 wolves

Total recaptured previously marked: 12 wolves

Plug the information into the estimated population formula:

Estimated Population = original number captured and marked (number recaptured on subsequent captures /number recaptured previously marked)

Estimated Population = 57 wolves (41 wolves/12 wolves)

Estimated Population = 57 wolves (3.417 wolves)

Estimated Population = 194.75 wolves