

Estimating Turtle Population Size

Go to: http://en.wikipedia.org/wiki/Mark_and_recapture for the Lincoln-Petersen and Schnabel Methods for estimation of turtle population size.

What to do:

“Catch” approx. 1/3 to 1/2 of the group of students give them a piece of paper (this is their identifying mark). Then “release” them back into the class. Get everyone to mingle. Then “catch” another group of students. Use the above calculation to estimate the class’s population. You will notice that the accuracy will vary depending on the amount of students you capture. This is probably something to point out as the more individuals you capture the more accurate it will be.

You can compare the estimate from the above calculation to this one: Schnabel Method of M-R. (found at same website as above). This is a less biased estimator of population size.

Both of these methods estimate population size but it just shows that scientists are always trying to improve their calculations. The second calculation should give a better estimate.

Important things to note:

1. This gives us a general population size but if we capture more than twice at a location we can use more complicated calculations to get a more accurate idea of population size.
2. This assumes that there is a closed population, so if 2 or 3 people leave between the first and second capture the calculation could be inaccurate.
3. This assumes that the students are not “trap happy” e.g. they want to be captured so they try to get caught (this often happens if we provide food that can be eaten in traps).