Given that we tagged r turtles. We want to estimate the population size. The workers re-capture n turtles randomly. We count which ones have already been tagged. We determine that the number of already tagged turtles is s. What population size N would give us this expected number of turtles?

If some wizard tells us that the population is actually N’, what is the probability that we recapture s turtles?

Suppose sally has x favourite marked turtles. Suppose the population size is N’. How many turtles does she need to catch to have a 50% chance of catching one of her turtles?