**Virtual Mark and Recapture Simulation**

In this simulation, you can see how changing the parameters of the mark and recapture activity can affect the outcome of its accuracy and reliability in terms of estimating a population count, which is essentially the main reason for doing mark and recapture.

Visit the [website](https://www.golabz.eu/lab/mark-and-recapture) and rea the documents under Additional Materials that explains the directions as to how the simulation works.

Then click on the “PREVIEW” button to bring you to the actual simulation. Now play around. Change the parameters to see how the following affect the accuracy of the population estimate, which can be deduced from examining the percent error; the smaller the percent error, the more accurate the activity was. Remember to only mess with one parameter a time at first! Then you can try and change more than one parameter at a time to further investigate.

Parameters to explore:

1. small vs. medium vs. large population
2. # of traps
3. Placement of traps

Keep track of your observations and results in terms of what led to the best accuracy.

I will post the following questions in Castle Learning (so you can answer them there – it makes it much easier for me to evaluate and monitor when you enter them there for me) relating to the activity.

**Questions:**

1. If you were to write a research question regarding the use of mark and recapture and use this simulation to investigate your question, what hypothesis could you make regarding one of the above listed parameters (population size/# of traps/placement of traps)?
2. Which factor seemed to have the largest effect on accuracy?
3. What was the ideal # of traps for getting the best accuracy in the large population?
4. What was the ideal # of traps for getting the best accuracy in the small population?
5. In what way did the placement of the traps seem to influence the results?
6. What parameter settings (that you tried) gave you the best accuracy?