

# Stepping Outside the Classroom: A Different Approach to Estimating Populations

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Population Ecology is often covered in introductory biology labs. Mark-recapture techniques used to estimate population size are usually investigated in labs by students counting different colored beans. This mini-workshop will demonstrate how you can engage your students through a two-part exercise originally developed at Eckerd College to investigate mark and recapture. The first part of the lab requires an outdoor space, where students participate in a playground tag-like activity. The objective is to supply a hands-on approach of mark-recapture by delegating one student as the *researcher* and the rest of the students as *fish*. Students learn methods of *marking* animals, *releasing* them back into the population, and then recapturing animals through a game of tag where *researchers* try to catch the *fish*. Mark-recapture theory, methods, and assumptions are reinforced and discussed back in the lab. Students then mathematically calculate an estimated abundance from the data collection. The second part of the exercise continues back in the lab, where students try to conduct mark-recapture estimates using photographs of animals with identifying markings (i.e. tags, coloration patterns, and/or distinguishing features). The original lab used photographs of naturally occurring marks on bottlenose dolphin dorsal fins, but was adapted for a variety of different datasets. This mini-workshop is intended to present a diverse method of teaching your students population ecology while not only engaging them but also enforcing the importance of proper data collection and statistical analysis.

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