

Laboratory Report on Exercise 1
Predator/Prey Relations

_____ (Date)

_____ (Name)

_____ (Lab Section)

Abstract

This exercise was designed to examine how prey can use different background to hide from predators. We wished to know if the color of background and the patterning of the background would help simulated prey items (poker chips) "hide" from a simulated predator (a student). Using 6 different backgrounds and 3 colors of chips, we found that color of background (had an/had no) effect on prey protection. We also found that patterned backgrounds (had an/had no) effect. [Include a sentence about whether the effect or lack thereof for both color and pattern was the same for all colors of chips].

Introduction

To determine if background color and pattern can affect the visibility and hence, vulnerability of prey, several different kinds of tests can be performed. Observations of real prey animals in different environments can be made. Computer simulations can be run. Laboratory exercises with simulated prey and simulated predators can also be run. We performed the latter exercise to test the following hypotheses. [Enter your hypotheses for each of the colored chips and the backgrounds here].

We also performed this experiment to learn skills of data collection and data analysis using Chi-Square tests.

Methods and Materials

Prey items consisted of red, white and blue poker chips placed on different colored cloth backgrounds. Backgrounds were either red, white or blue and were either solid colored or patterned. A team of [enter number] _____ students took turns being "predators", data recorders, or chip randomizers. Ten chips of each color were randomly placed on a background while the predator kept his/her eyes closed. After placement of the chips, the predator opened their eyes and grabbed the first chip they saw and then quickly closed their eyes again. The recorder noted which color chip was taken. The chip was returned to the background and the chips were randomized again. Predation was repeated 10 times for each color of background cloth.

Data were analyzed using Chi-Square analysis to test whether different colored chips were drawn randomly on each background (Wallace 1998). Alternatively, different colors could have been chosen either more than would be expected by random chance or less than would be expected.

Results

We found that different colors were not all chosen as if by random chance (Table 1). We found this to be especially true for the _____-colored chip on the _____-colored background. _____ color(s) was (were) chosen more often than would be expected by chance on the _____ background(s). _____ color(s) was (were) chosen less often than would be expected by chance on the _____ background(s).

[Fill in your results in Table 1].

Discussion

We conclude that the red chips are the most vulnerable to predation on the _____ background, while the white chips are the most vulnerable on the _____ background and the blue chips are the most vulnerable on the _____ background. The _____-colored chips are the least vulnerable on all backgrounds and the _____-colored chips seem to be the most vulnerable regardless of background.

_____ background type [solid or patterned] offered the most protection for chips. However, color of the background was important, too, with the _____ background appearing to offer the most protection for _____-colored chips.

Given my original hypotheses, I reject the following ones.

I fail to reject the following hypotheses.

We determined that background does make a difference in terms of vulnerability of simulated prey. However, this test would need to be altered to test the vulnerability of real prey to real predators. [make some suggestions here]

Literature Cited

Wallace, L. L. 1998. Ecology and Environmental Quality. A laboratory manual. Kendall/Hunt Publishers, Dubuque, IA.