BIOL 450W Powdermill Experiment Report Dr. T.A. Carlo Fall 2019

Write the following sections providing the requested information:

1. **Introduction (max 350 words).** Provide no more than two paragraphs of background to the topic of seed predation in relation to forest regeneration. Cite at least four papers from the primary literature (of course you need to read the papers to cite appropriately – some sample papers about the topic are in Angel, but you are encouraged to find and read other papers). As a guide, consider the following questions:
   1. How is seed predation relevant for forest regeneration?
   2. Why different habitats and microhabitats can be expected to influence the fate of the seeds of different plant species?
   3. What evolutionary tradeoffs are relevant for seed predation in terms of seed size, habitat, seed number produced by mother plants, and seed dispersal?
   4. Make sure to state the objectives and hypotheses of your study at the end of the intro.
2. **Materials & Methods (max 400 words).** Write a description of the methods in a way that someone else could reproduce the study just by reading it. If you have doubts, look at the assigned papers in Canvas for format and style ideas on how to write any of it.
   1. Describe the study area and the habitats. Describe your study design first (factors, levels, number of replicates, controls, species of seed using correct scientific names *italicized*). Describe the length of the boards, how many seeds per board, arrangement, etc. Describe how the boards were set up in the field in each habitat.
   2. include a section of **statistical analyses** used (the last section of the methods).
3. **Results (max 400 words).** Describe your results. Make a figure of average predation rate of plant species (y = avg. predation rate +- s.e., x = plant species) in each habitat type. Then make a second figure showing predation rates per microhabitats. If there is a significant interaction (habitat x microhabitat), then show the interaction figure. Show the “Effect Tests” table.
4. **Discussion (max 350 words)**. Discuss your results and interpret them in the context of seed dispersal and forest regeneration. Make sure you compare your results with published research papers in the topic and contrast your results with them.
   1. Finish the discussion by stating what should be the next directions: What will you do differently if you have the chance of running this experiment again? What other factors will you consider? What methods will you change?