HypothesesForMariano

Hi Mariano,

I lied a little bit. I looked at the hypothesis document I had, and honestly don’t like it because a lot of my hypotheses have had to change or be adjusted. So I’m writing a new, clean document for you. First, some background. I am trying to answer the broad question, “How does diversity in the array of community types within a meta-community affect disease dynamics?” with the hypothesis that as biodiversity increases diseases risk should generally decrease. I had more specific hypotheses which I’ll get into in a minute.

First, I want to remind you of the actually study design. I had ponds in groups of either 1,2, or 3 [Figure 1](#fig-ponds). I surveyed what amphibians were present in the system through a variety of methods. I also captured green frogs and swabbed them to test for diseases (the lab work Lilo and I are currently doing).

I have a couple different hypotheses depending on the scale: we are exploring the occupancy of each disease () , prevalence () , and infection intensity (p). My hypotheses are outlined in [Table 1](#tbl-hypotheses) .

The problem: I had originally planned to measure within a group of ponds. However, you can’t measure for a pond if it occurs by itself. I don’t want to exclude those ponds that are isolated because that’s a lot of data and it could still be interesting. I’m thinking of measuring by comparing a pond to all other ponds in the study, and I hypothesize that will be correlated with the number of ponds in the group.

That’s what I’m kind of stuck on at the moment. Any thoughts you have would be really helpful.

Thanks,

Reed

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| Table 1: Hypotheses for the relationship between disease risk ( , or p ) and diversity ( or ).   | Parameter | Covariate | Hypothesis | | --- | --- | --- | |  |  | when diversity is high disease occupancy should be low | |  |  | when diversity is high disease occupancy should be low | |  |  | when diversity is high disease prevalence should be low | |  |  | when diversity is high disease prevalence should be low | |  |  | when diversity is high infection intensity should be low | |  |  | when diversity is high infection intensity should be low | |

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| Figure 1: Ponds were either isolated (top), in pairs (middle), or in groups of three or more (bottom). |