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I worked alone

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Q1 (2 pts.): In 1 - 2 short paragraphs, explain the dichotomy in your own words and briefly describe how you might approach one of your research interests from each of the dichotomy endpoints.

Answer: The dichotomy is defined as a division or contrast between the concepts that represent or are concepts completely different. For example, the dichotomy population-based, individual-based. This dichotomy is based in technical details, we have to details how will be our sample, because made a protocol to sample the population could be totally different of the protocol to sample individuals.

In my investigation richness of birds in coffee plantation, my scope will be: strategic, because I have to planning how to visit the farms, how I could solicited permit to the farmers. Is applied because I will apply a protocol to understand the birds on the coffee crops. Quantitative, I have to measurement in numbers the bird's abundance or richness. Predictive, I will apply model to predict the richness or abundance of birds. Statistical, I must apply statistic to predict. About technical details those will be analytical, dynamic, continuous, and population-based. Accord to sophistication will be complex and sophisticated.

Q2 (2 pts.): Identify at least one source of bias or assumption (cultural, scientific, other). Hypothesize a practical impact these biases or assumptions might have on scientific communication and the effectiveness of management efforts? (1 - 3 paragraphs)

Answer: About McGarigal states in chapter 1, the source of bias is the opinion of the society, the people does not have the same ideas or think the same, some people could believe in theory without argument, and others could do not believe for culture.

About the four testimonials regarding climate change and bird nesting habitat, a source of bias is the investigator, the fact that he or she wanted to prove that nesting birds are affect for the climate changed is a bias, he or she is try to found a way to shown her or his hypothesis.

Q3 (2 pts.): In 1 - 2 short paragraphs, describe the following:

- o Identify and briefly define the two primary components of a model constructed in the dual model paradigm.

Answer: Deterministic component and the stochastic component of the model. The deterministic component is the average or expected pattern in the absence of any kind of randomness or measurement error. The stochastic component is the specifying a reasonable probability distribution for the variation.

- o Give an example of the two components in the context of a system you are interested in studying.

Answer: The richness of birds in coffee crops, the deterministic component will be the average of the richness of bird, and the stochastic component could be a Poisson distribution as probability of the variation.

Q4 (2 pts.): In 1 - 2 short paragraphs, describe the difference between a statistical and biological or ecological population.

Answer: A statistical population is any group of individuals who are subject of study, and a statistical population is -usually- a subset of an ecological population. The ecological population is the collection of all possible sampling units

- o Which of these populations may vary depending on the spatial or temporal scale of the research question?

Answer: The statistical population

Q5 (2 pts.): For each of your two chosen variables: Describe your proposed entity or variable and explain your chosen data type/scale is appropriate.

> Answer: I will use the "abundance of *Pinus resinosa" as a* continuous variable on an ratio scale, because I could measurement in counts (0, 1, 2, 3, 4, etc.) and be adequate with the ratio scale. I will use the variable "deaths of *Pinus resinosa"*, by the white pine blister rust as a numerical variable on an interval scale, because This variable could be measured in intervals of deaths, 0-10, 11-20, 21-30, etc.