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Biology 315

Lab 9: PCAP Project Proposal

**Introduction**

The goal of PCAP is to assess the plant community within the Metroparks. One of the more prominent causes of disturbance to the plant community is deer browse, so I want to examine the spatial patterns of deer browse within an individual reservation. A driving factor for deer browsing behavior is the relative location to the habitat edge. I think that a key component to prioritizing deer management is through an understanding this deer behavior.

**Hypothesis**

Deer browsing will be found more abundantly in reservations with a higher edge-to-area ratio (long vs. round) because deer browse is more frequent along the edge of a reservation than within it. If this hypothesis is true I predict that plots closer to the edge will have a lower vegetative quality.

**Methods**

For this analysis I will rank each reservation as either long (high edge ratio) or round (low edge ratio). I will use analysis of variance on the total animal disturbance for each reservation. For this simple first analysis, just the reservation will be the predictor and the average animal disturbance will be the response. Then I will use spatial autocorrelation to analyze plots closer to the edge of the reservations against those towards the center. The response is the amount of deer browse and the predictors are the distance from the edge of the reservation. Since this is not an analysis method learned in class, some of the specific methods of the analysis will be exploratory. In addition, some of the analysis may depend on other data from the Metroparks for deer populations.

**Discussion**

With this analysis I can paint a clearer picture of deer browse behavior in the Metroparks reservations. This will give the Metroparks staff an initial idea of where priority areas on the parks are not only across the whole system but also within each reservation. In this lab a large learning gain for me was taking a lot of data and ideas and combining and condensing them into a single idea. I was able to take my interest in spatial data and apply it to a large management problem that the Metroparks is dealing with.