Lichen as Bioindicators: A Study into the Relationship Between Lichen Thallus Structures and Their Sensitivity to NOx and SOx

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It can be found that lichen are commonly used as bioindicators by scientists in order detect air pollution. This project was targeted at evaluating if lichens can be used as bioindicators just by simply looking at the thallus type of a lichen (general shape/structure). Sites were chosen within 50 miles of Portland, Oregon and separated into groups based on the urban environment surrounding them. A total of 25 sites have been surveyed using quadrants to observe the total amount of lichen of certain thallus structures as well as how much of a pollution tolerant species of that thallus type were present. As of yet, it can be concluded that there is a significant correlation between the type of park and percentage of lichen to tolerant species, as well as a slight correlation of population density around a park and distance with percentage of lichen to tolerant species. Samples of the species E. prunastri will be sent into an analytical lab for Nitrogen and Sulfur testing by the end of the month. The end goal of this project is to determine a quick methodology for determining air pollution in a general area and to map the possible pollution in the Portland area.

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