The Effects of Distance from a Stream on the Abundance of Ten Lichen Genera in Riparian Habitats

Handley, Madeline

To determine how distance from a stream affects the abundance of lichens, I recorded the abundance class of 10 different lichen genera growing on trees at different distances from a stream near Basin Road in Juneau, Alaska. Abundance class categorizes the number of lichen thalli in a given area on a scale of 0-5. For my project, I chose the null hypothesis that the distance from a stream would not affect the abundance classes of lichen in any of the genera. For Cladonia, Dendriscocaulon, Hypotrachina, Leptogium, Peltigera, Platismatia and Sticta, the data supports the null hypothesis. However, lichens in the genera Nephroma, Parmelia and Pseudocyphellaria show quadratic correlations with distance from a stream, and therefore reject the null hypothesis. The trendlines of the scatter plots of Nephroma, Parmelia and Pseudocyphellaria have the equations (y = 0.0229x2 - 0.4332x + 3.3515), (y = 0.0238x2 - 0.4865x + 3.1778) and (y = 0.0216x2 - 0.4408x + 2.1192), respectively. This shows that the abundance of these lichens decreases with distance from the stream to a point, then begins to increase again. The results of my project suggest some of the lichen genera one might find at different distances from a stream. This information would be useful to people who plan to do construction in or otherwise disturb riparian habitats, because they would have an idea of what types of lichens they would be affecting. This knowledge is important because lichens are an important food source and nesting material for many Alaskan animals.

Awards Won: