A Comparison of Forest Sampling Results From Two Successive Years in the Same Location in the North Carolina Mountains

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Abstract

Within the fields of botany and ecology, there are various methods of vegetative sampling which allow scientists to develop quantitative descriptions of the plant species present in a given community. As with any science involving the human element, a risk for error exists when sampling. This experiment sought to compare the plant species composition of a single location in two consecutive years, while also determining the accuracy of vegetative sampling done by the 2014 and 2015 Field Botany and Ecology classes in the Summer Ventures program at the University of North Carolina at Charlotte. Data, including the number of individuals and the diameter at breast height (dbh) of canopy and subcanopy trees in plots $100m^2$ and $25m^2$ respectively, along with the number of individuals of shrub/transgressive and herb/seedling species in $25m^2$ and $1m^2$ plots, were gathered in a second-growth forest in Julian Price Memorial Park near Blowing Rock, North Carolina. On a species and summative basis, there were a few variances in raw measurements such as importance value, relative density, frequency, and basal area between 2014 and 2015. However, once the data were interpreted using statistical analysis methods capable of accounting for the significance of variances, it became clear that the vegetative sampling methods used were reliable. In addition, it was found that despite the establishment of random plots within the second-growth forest, there was consistency between the composition of the forest as determined from samples taken in two consecutive years.